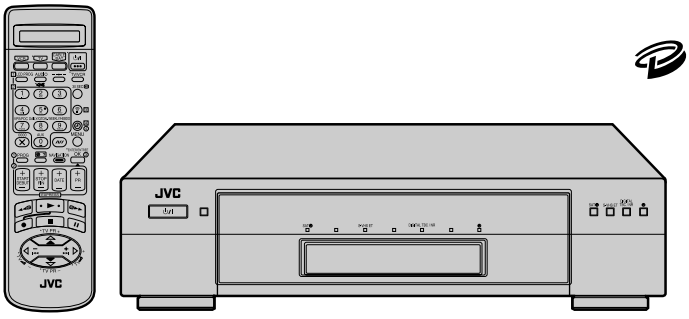
JVC

SERVICE MANUAL

VIDEO CASSETTE RECORDER

HR-S9700EK/EU



TIME JOG & SCAN
SHOWVIEW® DELUXE
Hi-Fi S-VHS 625
Super VHS ET

SPECIFICATIONS *(The specifications shown pertain specifically to the model HR-S9700EU)*

GENERAL

Power requirement	: AC 220 V – 240 V∿ , 50 Hz/60 Hz
Power consumption	
Power on	: 25 W
Power off	: 5.2 W
Temperature	
Operating	: 5°C to 40°C
Storage	: –20°C to 60°C
Operating position	: Horizontal only
Dimensions (WxHxD)	: 437 mm x 106 mm x 352 mm
Weight	: 5.1 kg
Format	: S-VHS/VHS PAL standard
Maximum recording time	
(SP)	: 240 min. with E-240 video cassette
(LP)	: 480 min. with E-240 video cassette
(EP)	: 720 min. with E-240 video cassette

VIDEO/AUDIO

Signal system	: PAL-type colour signal and CCIR monochrome signal, 625 lines 50 fields
Recording system	: DA4 (Double Azimuth) head helical scan system
Signal-to-noise ratio	: 45 dB
Horizontal resolution	
(SP/LP)	: 250 lines (VHS) 400 lines (S-VHS)
(EP)	: 220 lines (VHS) 350 lines (S-VHS)
Frequency range	: 70 Hz to 10,000 Hz (Normal audio) 20 Hz to 20,000 Hz (Hi-Fi audio)
Input/Output	: 21-pin SCART connectors: IN/OUT x 1, IN/DECODER x 1 RCA connectors: VIDEO IN x 1, AUDIO IN x 1, AUDIO OUT x 1 S-Video connectors: IN x 1, OUT x 1

TUNER/TIMER

TV channel storage capacity	: 99 positions (+AUX position)
Tuning system	: Frequency synthesized tuner
Channel coverage	: VHF 47 MHz – 89 MHz/ 104 MHz – 300 MHz/ 302 MHz – 470 MHz UHF 470 MHz – 862 MHz
Aerial output	: UHF channels 22 – 69 (Adjustable)
Memory backup time	: Approx. 60 min.

ACCESSORIES

Provided accessories	: RF cable, S-Video cable, Satellite Controller RM-SD1, Infrared remote control unit, "R6" battery x 2, S-VHS ET labels

Specifications shown are for SP mode unless otherwise specified.
E.& O.E. Design and specifications subject to change without notice.

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The following table lists the differing points between Models (HR-S9700EK AND HR-S9700EU) in this series.

	HR-S9700EK	HR-S9700EU
VIDEO SYSTEM	PAL/NTSC PB ON PAL TV	PAL/MESECAM (MANUAL)/NTSC PB ON PAL TV
TUNER (BROADCASTING STANDARD)	I	B/G, D/K
TUNER (STEREO DECODER)	NICAM	NICAM/A2
TUNER (RF OUT SYSTEM)	I	G, K
DISPLAY (LANG.)	ENGLISH	14LANGUAGE
TIMER (VCR PLUS+)	VIDEO PLUS+ DELUXE	SHOW VIEW DELUXE
TIMER (VPS)	NOT USED	USED

Important Safety Precautions

Prior to shipment from the factory, JVC products are strictly inspected to conform with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

● Precautions during Servicing

1. Locations requiring special caution are denoted by labels and inscriptions on the cabinet, chassis and certain parts of the product. When performing service, be sure to read and comply with these and other cautionary notices appearing in the operation and service manuals.

2. Parts identified by the ⚠ symbol and shaded ( ) parts are critical for safety.
   Replace only with specified part numbers.
   Note: Parts in this category also include those specified to comply with X-ray emission standards for products using cathode ray tubes and those specified for compliance with various regulations regarding spurious radiation emission.

3. Fuse replacement caution notice.
   Caution for continued protection against fire hazard.
   Replace only with same type and rated fuse(s) as specified.

4. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads

5. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulation Tape 3) Spacers 5) Barrier
   2) PVC tubing 4) Insulation sheets for transistors

6. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.) wrap ends of wires securely about the terminals before soldering.

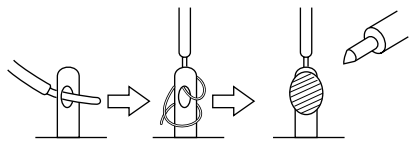


Fig.1

7. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.)

8. Check that replaced wires do not contact sharp edged or pointed parts.

9. When a power cord has been replaced, check that 10-15 kg of force in any direction will not loosen it.

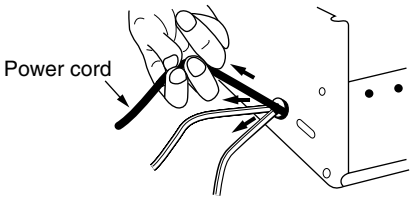


Fig.2

10. Also check areas surrounding repaired locations.

11. Products using cathode ray tubes (CRTs)
    In regard to such products, the cathode ray tubes themselves, the high voltage circuits, and related circuits are specified for compliance with recognized codes pertaining to X-ray emission.
    Consequently, when servicing these products, replace the cathode ray tubes and other parts with only the specified parts. Under no circumstances attempt to modify these circuits.
    Unauthorized modification can increase the high voltage value and cause X-ray emission from the cathode ray tube.

12. Crimp type wire connector
    In such cases as when replacing the power transformer in sets where the connections between the power cord and power transformer primary lead wires are performed using crimp type connectors, if replacing the connectors is unavoidable, in order to prevent safety hazards, perform carefully and precisely according to the following steps.

    1) Connector part number : E03830-001
    2) Required tool : Connector crimping tool of the proper type which will not damage insulated parts.
    3) Replacement procedure
    (1) Remove the old connector by cutting the wires at a point close to the connector.
    Important : Do not reuse a connector (discard it).

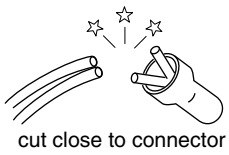


Fig.3

(2) Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.

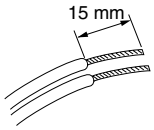


Fig.4

(3) Align the lengths of the wires to be connected. Insert the wires fully into the connector.

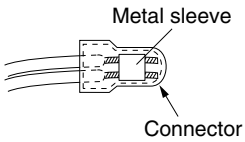


Fig.5

(4) As shown in Fig.6, use the crimping tool to crimp the metal sleeve at the center position. Be sure to crimp fully to the complete closure of the tool.

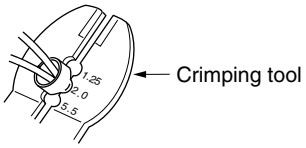


Fig.6

(5) Check the four points noted in Fig.7.

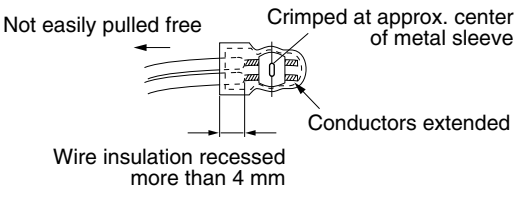

Not easily pulled free
Crimped at approx. center of metal sleeve
Conductors extended
Wire insulation recessed more than 4 mm

Fig.7

● Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions, Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

1. Insulation resistance test

Confirm the specified insulation resistance or greater between power cord plug prongs and externally exposed parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

2. Dielectric strength test

Confirm specified dielectric strength or greater between power cord plug prongs and exposed accessible parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

3. Clearance distance

When replacing primary circuit components, confirm specified clearance distance (d), (d') between soldered terminals, and between terminals and surrounding metallic parts. See table 1 below.

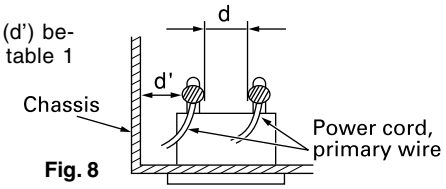


Fig. 8

4. Leakage current test

Confirm specified or lower leakage current between earth ground/power cord plug prongs and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.).

Measuring Method : (Power ON)

Insert load Z between earth ground/power cord plug prongs and externally exposed accessible parts. Use an AC voltmeter to measure across both terminals of load Z. See figure 9 and following table 2.

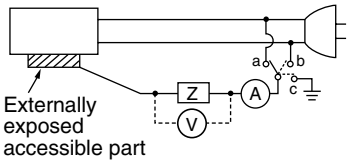


Fig. 9

5. Grounding (Class 1 model only)

Confirm specified or lower grounding impedance between earth pin in AC inlet and externally exposed accessible parts (Video in, Video out, Audio in, Audio out or Fixing screw etc.).

Measuring Method:

Connect milli ohm meter between earth pin in AC inlet and exposed accessible parts. See figure 10 and grounding specifications.

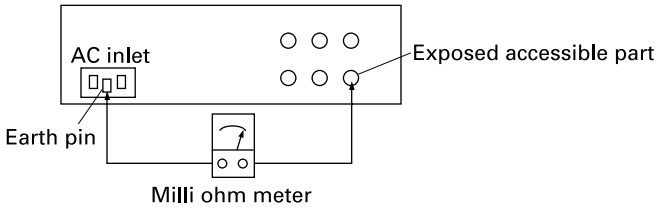


Fig. 10

Grounding Specifications

Region	Grounding Impedance (Z)
USA & Canada	Z ≦ 0.1 ohm
Europe & Australia	Z ≦ 0.5 ohm

AC Line Voltage	Region	Insulation Resistance (R)	Dielectric Strength	Clearance Distance (d), (d')
100 V	Japan	R ≧ 1 MΩ/500 V DC	AC 1 kV 1 minute	d, d' ≧ 3 mm
100 to 240 V			AC 1.5 kV 1 miute	d, d' ≧ 4 mm
110 to 130 V	USA & Canada	1 MΩ ≦ R ≦ 12 MΩ/500 V DC	AC 1 kV 1 minute	d, d' ≧ 3.2 mm
110 to 130 V 200 to 240 V	Europe & Australia	R ≧ 10 MΩ/500 V DC	AC 3 kV 1 minute (Class Ⅱ) AC 1.5 kV 1 minute (Class Ⅰ)	d ≧ 4 mm d' ≧ 8 mm (Power cord) d' ≧ 6 mm (Primary wire)

Table 1 Specifications for each region

AC Line Voltage	Region	Load Z	Leakage Current (i)	a, b, c
100 V	Japan	1 kΩ	i ≦ 1 mA rms	Exposed accessible parts
110 to 130 V	USA & Canada	0.15 μF, 1.5 kΩ	i ≦ 0.5 mA rms	Exposed accessible parts
110 to 130 V 220 to 240 V	Europe & Australia	2 kΩ	i ≦ 0.7 mA peak i ≦ 2 mA dc	Antenna earth terminals
		50 kΩ	i ≦ 0.7 mA peak i ≦ 2 mA dc	Other terminals

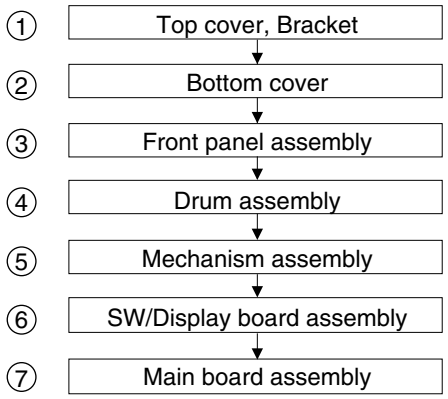
Table 2 Leakage current specifications for each region

Note: These tables are unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality.

SECTION 1
DISASSEMBLY

1.1 DISASSEMBLY FLOW CHART

This flowchart lists the disassembling steps for the cabinet parts and P.C. boards in order to gain access to item(s) to be serviced. When reassembling, perform the step(s) in reverse order. Bend, route and dress the flat cables as they were originally laid.



1.2 HOW TO READ THE DISASSEMBLY AND ASSEMBLY

<Example>

Step/ Loc No.	Part Name	Fig. No.	Point	Note
①	Top cover, Bracket	D1	4(S1a),(S1b),3(L1a), 2(SD1a),(P1a), CN1(WR1a), 2(S1c)	<Note 1>
	(1)	(2)	(3)	(4) (5)

(1) Order of steps in Procedure
When reassembling, perform the step(s) in the reverse order. These numbers are also used as the identification (location) No. of parts Figures.
(2) Part name to be removed or installed.
(3) Fig. No. showing procedure or part location.
(4) Identification of part to be removed, unhooked, unlocked, released, unplugged, unclamped or unsoldered.
P= Spring, W= Washer, S= Screw, L= Locking tab, SD= Solder, CN**(WR**)= Remove the wire (WR**) from the connector (CN**).

Note:

- ***The bracketed ( ) WR of the connector symbol are assigned nos. in priority order and do not correspond to those on the spare parts list.***

(5) Adjustment information for installation

1.3 DISASSEMBLY/ASSEMBLY METHOD

Step/ Loc No.	Part Name	Fig. No.	Point	Note
①	Top cover Bracket	D1	4(S1a),(S1b) 2(S1c)	
②	Bottom cover	D2	4(L2a), Foot (rear), 4(L2b), Foot assy, (S2a),2(S2b),4(L2c), 3(L2d)	<Note 2>
③	Front panel assembly	D3-1	9(L3), CN7002(WR3a)	<Note 3a> <Note 3b>
	(Membrane door assy)	D3-2	(S3a),Holder, 2(S3b),Damper assy, (S3c),(WR3b), (WR3c)	<Note 3c>
④	Drum assembly	D4	3(S4), CON1(WR4a), CN1(WR4b)	<Note 3a>
	(Inertia plate)		4(L4a)	
	(Roller arm assy)		(P4), (L4b)	
⑤	Mechanism assembly	D5	CN1(WR5),2(S5a), (S5b),(S5c),2(L5)	<Note 3a> <Note 5a> <Note 5b>
⑥	SW/Display board assembly	D6	CN7001(WR6a), CN7191(WR6b), CN7192(WR6c), (L6a), REC safety board assy, 2(L6b), 4(L6c)	<Note 3a> <Note 6>
⑦	Main board assembly	D7	2(S7a), (S7b)	

<Note 2>

- When attaching the Bottom cover, make sure that the Earth plate of the Bottom cover is passed through the hole of the Bottom chassis and then touches the GND (Ground) on the Main board assembly.

<Note 3a>

- Be careful not to damage the connector and wire etc. during connection and disconnection.
When connecting the wire to the connector, be careful with the wire direction.

<Note 3b>

- When reattaching the Front panel assembly, make sure that the door opener ⓐ of the Cassette holder assembly is lowered in position prior to the reinstallation.

<Note 3c>

- When fixing the screw (S3c), jointly secure the lug wires (WR3b and WR3c).

<Note 5a>

- When it is required to remove the screws (S5a) retaining the Mechanism assembly, please refer to the “Procedures for Lowering the Cassette holder assembly”(See on page 1-2).
- When removing the Mechanism assembly only, unhook the two spacers connecting it with the Main board assembly with pliers from the back side of the Main board assembly first, and then remove the Mechanism assembly.
- When reattaching the Mechanism assembly to the Main board assembly, take care not to damage the sensors on the Main board assembly (D3001: LED, Q3002: Start sensor, Q3003: End sensor, S3002: S cassette switch).

<Note 5b>

- The wire (WR5) has excess length that may be loose, as it is quite long. After inserting the wire and connectors, the loose portion of the wire should be taken up and accommodated between the A/C head base and the main deck.

<Note 6>

- The REC safety board assembly is attached to the SW/Display board assembly. It is therefore necessary to remove the REC safety board assembly before removing the SW/Display board assembly.

Procedures for Lowering the Cassette holder assembly

As the mechanism of this unit is integrated with the Housing assembly, the holder must be lowered and the two screws unscrewed when removing the Mechanism assembly.

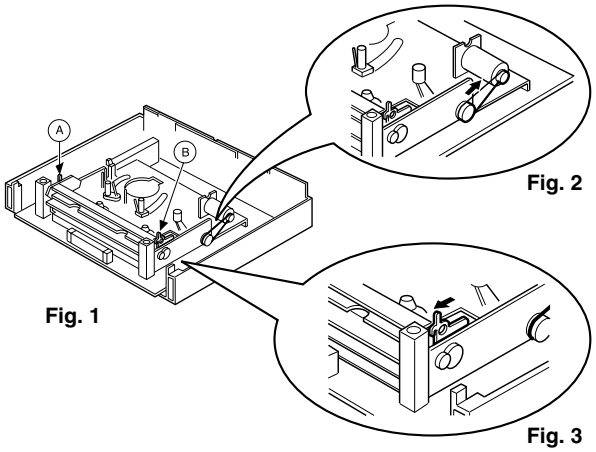


Fig. 1

Fig. 2

Fig. 3

Turn the loading motor pulley in the direction as indicated by Fig.2. As both Ⓐ and Ⓑ levers are lodged twice, push the levers in the direction as indicated by Fig.3 to release them. When pushing the levers, do it in the order of Ⓐ, Ⓑ, Ⓑ, Ⓐ. When the holder has been lowered, turn the pulley until the cassette holder is securely in place without allowing any up/down movement.

Procedures for Lowering the Cassette holder assembly

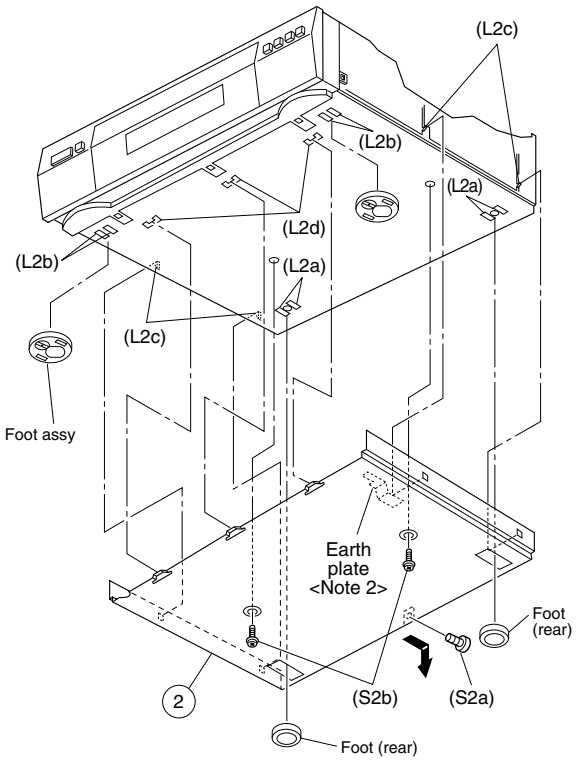


Fig. D2

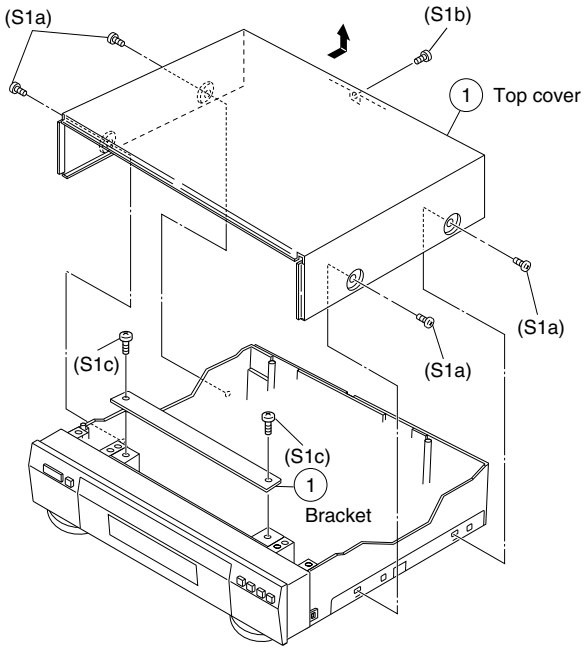


Fig. D1

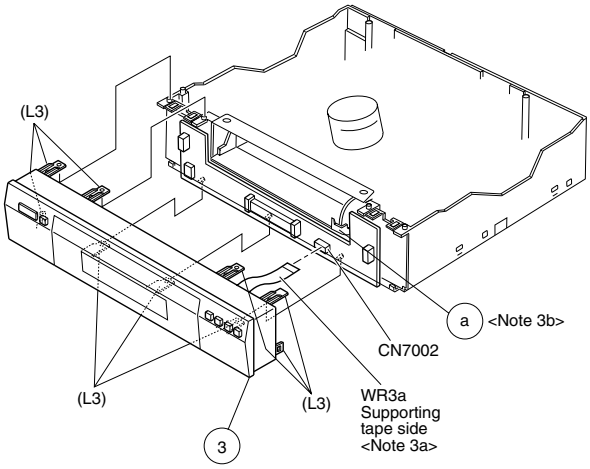


Fig. D3-1

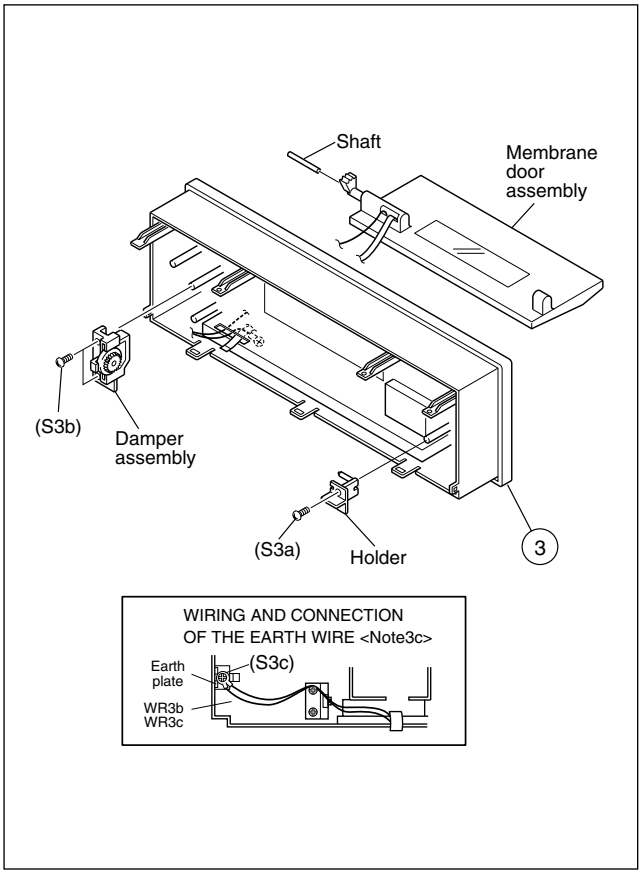


Fig. D3-2

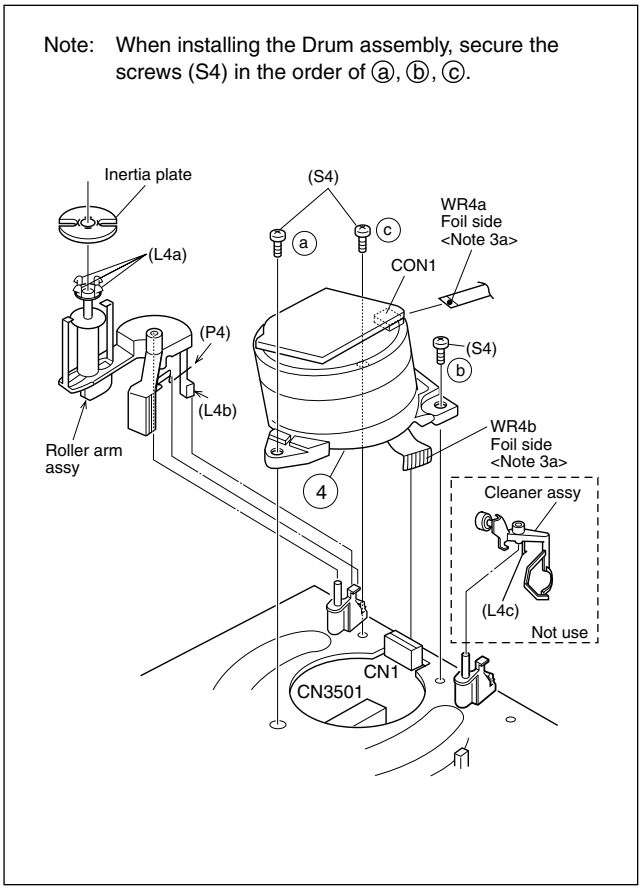


Fig. D4

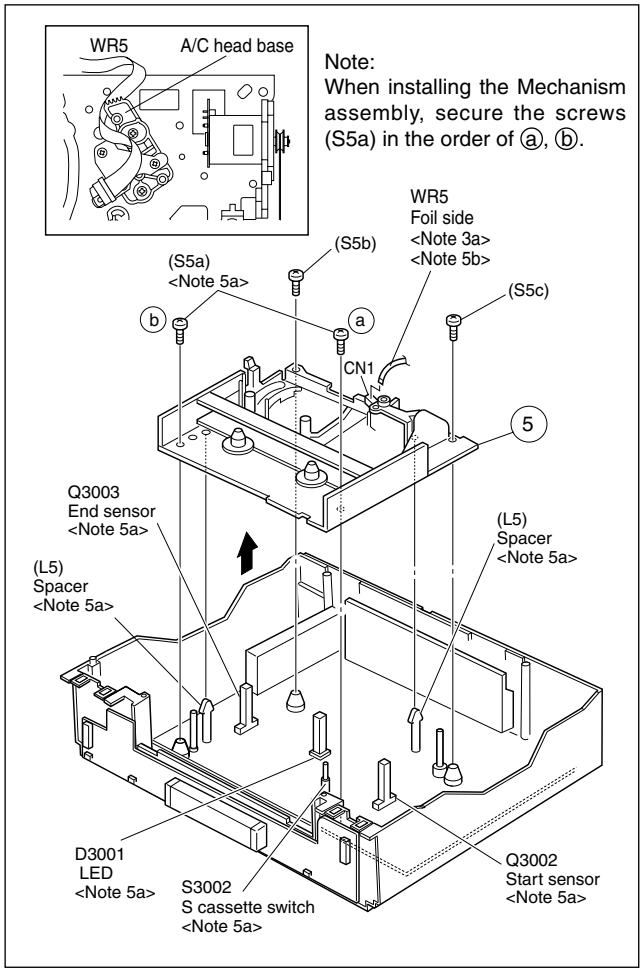


Fig. D5

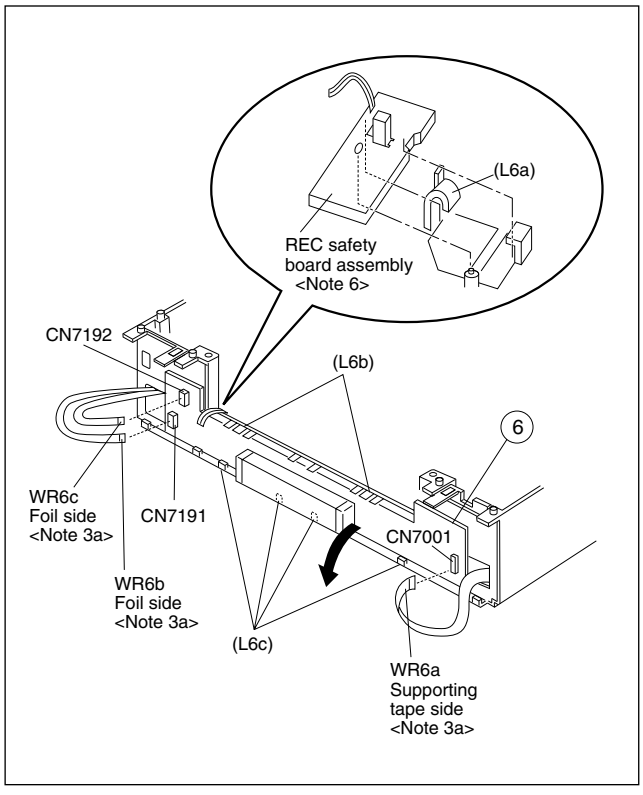


Fig. D6

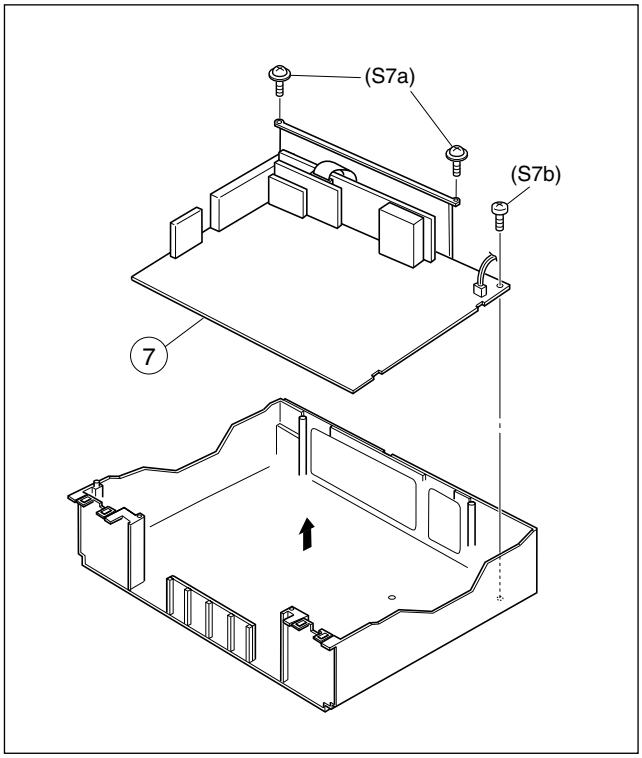


Fig. D7

1.4 SERVICE POSITION

In order to facilitate diagnosis and the repair of the Mechanism assembly, this unit is constructed so as to allow the Mechanism and Main board assemblies to be removed together from the Bottom chassis assembly.

1.4.1 How to take out the Mechanism and Main board assemblies

(1) Remove the Top cover, Bracket and Front panel assembly. (Refer to 1.3 DISASSEMBLY/ASSEMBLY METHOD.)
(2) Lower the cassette holder, and make the preparations required in order to remove the screws from the Mechanism assembly. (Refer to the “Procedures for Lowering the Cassette holder assembly” on page 1-2 of 1.3 DISASSEMBLY/ASSEMBLY METHOD.)

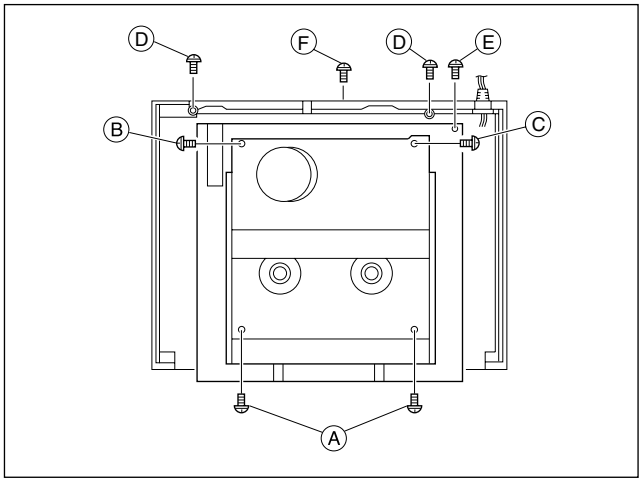


Fig. 1-4-1

(3) Take out 2 screws Ⓐ, 1 screw Ⓑ and 1 screw Ⓒ as shown in Fig. 1-4-1.
(4) Remove the flat wires from CN3011, CN901 and CN902 on the Main board assembly.
(5) Take out 2 screws Ⓓ, 1 screw Ⓔ and 1 screw Ⓕ as shown in Fig. 1-4-1.
(6) Remove the Main board and Mechanism assemblies together while holding the edge of the Main board assembly. At this stage be careful of the power cord and prongs of the jacks on the back side. (Refer to Fig. 1-4-2.)
(7) Remove the SW/Display board assembly and REC safety board assembly. (Refer to page 1-3 of 1.3 DISASSEMBLY/ASSEMBLY METHOD. Take care not to pull the flat wires (Fig. D6) from CN7001, CN7191 and CN7192.)

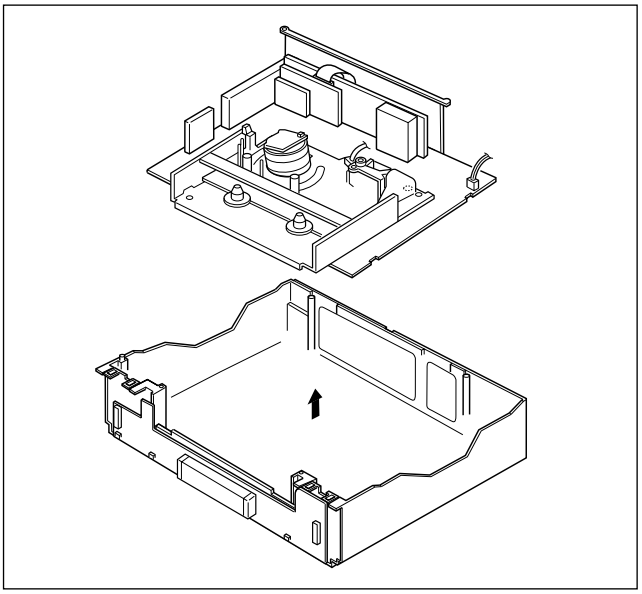


Fig. 1-4-2

(8) Place the SW/Display board assembly and REC safety board assembly on the front side of the Mechanism and Main board assemblies which was removed at the step (6), then connect the flat wires into CN3011, CN901 and CN902 of the Main board assembly. (Refer to Fig. 1-4-3.)

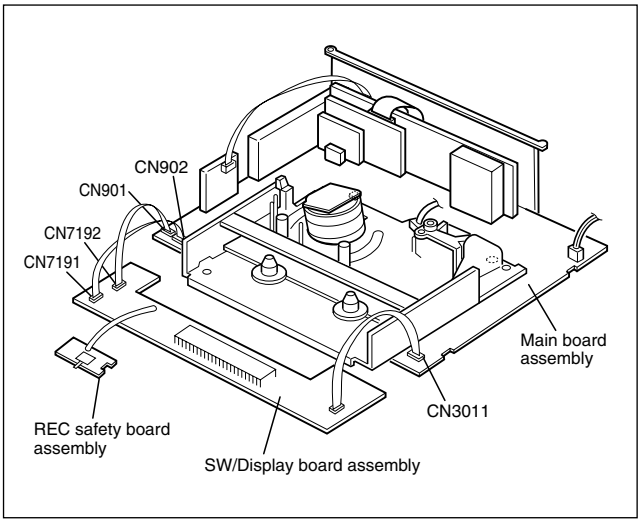


Fig. 1-4-3

(9) Connect the power cord to the wall socket, and lift the cassette holder.
(Before turning on the power make sure that there is nothing which may produce a short circuit, such as faulty soldering.)

Note:

- ***When carrying out diagnosis and repair of the Main board assembly in the service position, be sure to ground both the Main board and the Mechanism assemblies.***

  If they are improperly grounded, there may be noise on the playback picture or the FDP counter display may move even when the mechanism is kept in an inoperative status.

1.4.2 Precautions for cassette loading in the "SERVICE POSITION"

The REC safety board assembly detects cassette loading as well as cassette tabs. Therefore, after the assembly has been removed in the "SERVICE POSITION", it is required to set the switch manually on the REC safety board assembly when a cassette is loaded.

1.4.3 Cassette loading and ejection methods in the "SERVICE POSITION"(See Fig. 1-4-3).

(1) Insert a cassette halfway in the Cassette holder assembly.
(2) Set the switch on the REC safety board assembly to ON (by pressing the switch).
(3) As soon as the cassette starts to be loaded, set the switch on the REC safety board assembly to OFF (by releasing the switch).
(4) Now the desired operation (recording, playback, fast forward, rewind, etc.) is possible in this status (the status shown in Fig.1-4-3).

Notes:

- ***When performing diagnostics of the tape playback or the recording condition in the "SERVICE POSITION", enter the desired mode before turning the set upside down, and do not change the mode when performing diagnostics while the set is placed upside down. If you want to switch the mode, turn the set to the normal position (the status shown in Fig.1-4-3).***
- ***In the "SERVICE POSITION", the cassette tabs cannot be detected and recording becomes possible even with a cassette with broken tabs such as the alignment tape. Be very careful not to erase important tapes.***

(5) The switch on the REC safety board assembly does not have to be operated when ejecting a tape. But be sure to turn the set to the normal position before ejecting the tape.

1.5 MECHANISM SERVICE MODE

This model has a unique function to enter the mechanism into every operation mode without loading of any cassette tape. This function is called the “MECHANISM SERVICE MODE”.

1.5.1 How to set the "MECHANISM SERVICE MODE"

(1) Disconnect VCR from AC.
(2) Connect TPGND and TP7001 (TEST) on the SW/Display board assembly with a jump wire.
(3) Connect VCR to AC.
(4) Press the POWER button.
(5) With lock levers Ⓐ Ⓑ on the left and right of the Cassette holder assembly pulled toward the front, slide the holder in the same direction as the cassette insertion direction. (For the positions of lock levers Ⓐ Ⓑ, refer to the “Procedures for Lowering the Cassette holder assembly” on page 1-2 of 1.3 DISASSEMBLY/ASSEMBLY METHOD.)
(6) The cassette holder lowers and, when the loading has completed, the mechanism enters the desired mode.

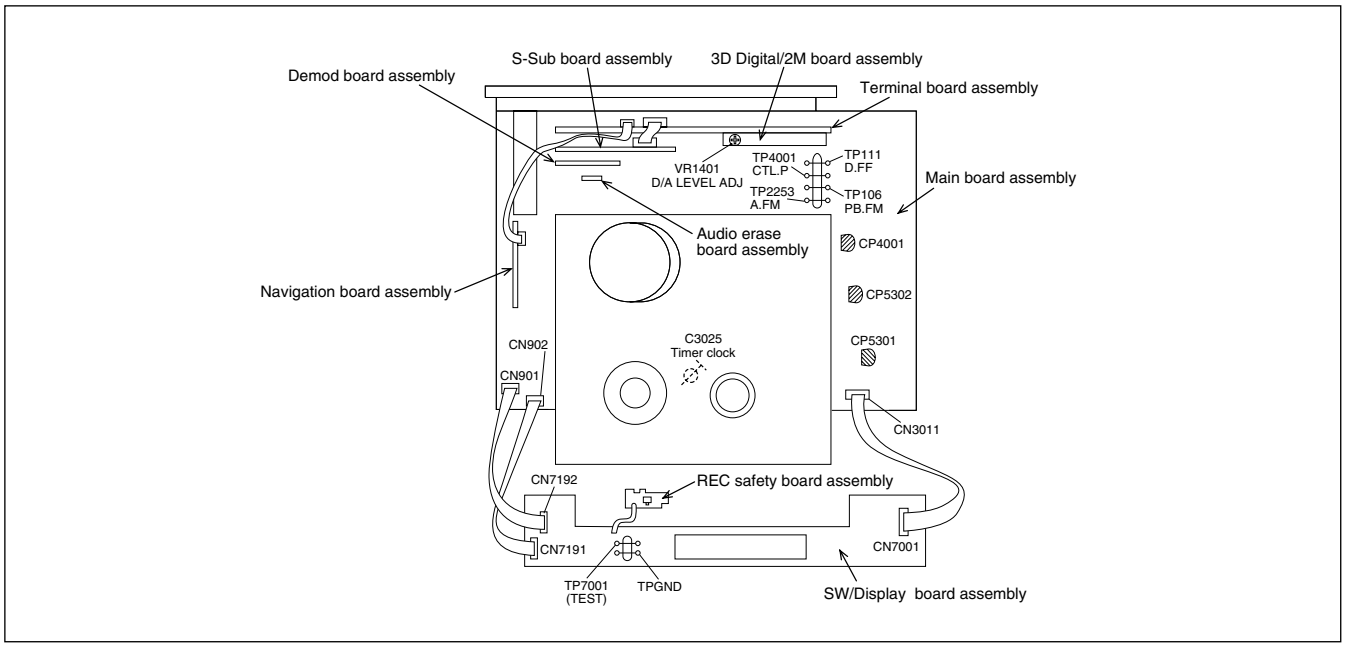
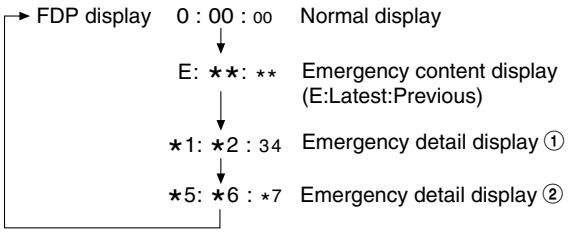


Fig. 1-5-1

1.6 EMERGENCY DISPLAY FUNCTION

This unit has a function for storing the history of the past two emergencies (EMG) and displaying them on each FDP. With the status of the VCR and mechanism at the moment an emergency occurred can also be confirmed.

FDP display switching



Notes:

- ***The emergency detail display ①② show the information on the latest emergency.***
  It becomes " – – : – – : – –" when there is no latest emergency record.
- ***When using the Jig RCU, set its custom code to match the custom code of the VCR.***

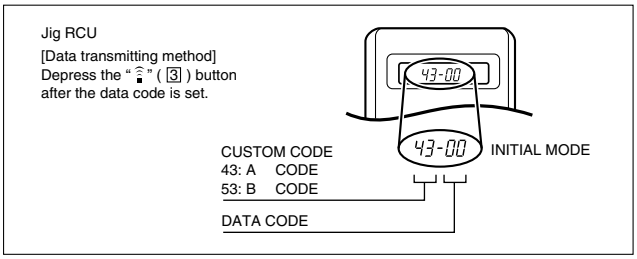
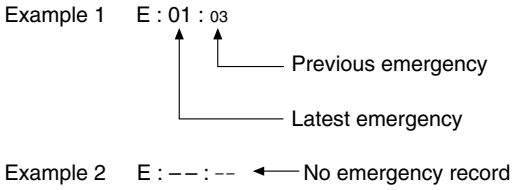


Fig. 1-6-1 Jig RCU [PTU94023B]

1.6.1 Displaying the emergency information

(1) Transmit the code "59" from the Jig RCU.
The FDP shows the emergency content in the form of "E:★★:★★".



Note:

- ***For the emergency content, see "1.6.3 Emergency content description".***

(2) Transmit the code "59" from the Jig RCU again.
The FDP shows the emergency detail information ① in the form of "★1 : ★2 : 34".

★1 : Deck operation mode at the moment of emergency
★2 : Mechanism operation mode at the moment of emergency
3– : Mechanism sensor information at the moment of emergency
–4 : Mechanism mode position at the moment of emergency

Note:

- ***For the emergency detail information ①, see "1.6.4 Emergency detail information ①".***

(3) Transmit the code "59" from the Jig RCU once again.
The FDP shows the emergency detail information② in the form of "★5 : ★6 : ★7".

★5 : Type of the cassette tape in use ①.
★6 : Winding position of the cassette tape in use
★7 : Type of the cassette tape in use ②(Winding area)

Note:

- ***For the emergency detail information ②, see "1.6.5 Emergency detail information ②".***

(4) Transmit the code "59" from the Jig RCU once again to reset the display.

1.6.2 Clearing the emergency history

(1) Display the emergency history.
(2) Transmit the code "36" from the Jig RCU.
(3) Reset the emergency display.

(Y292-03e)

1.6.3 Emergency content description

Note: ***Emergency contents "E08/E09" are for the model with Dynamic Drum (DD).***

FDP	CONTENT	CAUSE
E01: Loading EMG	When the mechanism mode cannot be changed to another mode even when the loading motor has rotated for more than 4 seconds in the loading direction, [E:01] is identified and the power is turned off.	① The mechanism is locked in the middle of mode transition. ② The mechanism is locked at the loading end due to the encoder position reading error during mode transition. ③ Power is not supplied to the loading MDA.
E02: Unloading EMG	When the mechanism mode cannot be changed to another mode even when the loading motor has rotated for more than 4 seconds in the unloading direction, [E:02] is identified and the power is turned off.	① The mechanism is locked in the middle of mode transition. ② The mechanism is locked at the unloading end due to the encoder position reading error during mode transition. ③ Power is not supplied to the loading MDA.
E03: Take Up Reel Pulse EMG	When the take-up reel pulse has not been generated for more than 4 seconds in the capstan rotating mode, [E:03] is identified, the pinch rollers are turned off and stopped, and the power is turned off. However, the reel EMG is not detected in STILL/SLOW modes.	① The take-up reel pulse is not generated in the FWD transport modes (PLAY/FWD SEARCH/FF, etc.) because; 1) The idler gear is not meshed with the take-up reel gear; 2) The idler gear is meshed with the take-up reel gear, but incapable of winding due to too large mechanical load (abnormal tension); 3) The take-up reel sensor does not output the FG pulse. ② The supply reel pulse is not generated in the REV transport modes (REV SEARCH/REW, etc.) because; 1) The idler gear is not meshed with the supply reel gear. 2) The idler gear is meshed with the supply reel gear, but incapable of winding due to too large a mechanical load (abnormal tension); 3) The supply reel sensor does not output the FG pulse. ③ Power is not supplied to the reel sensors.
E04: Drum FG EMG	When the drum FG pulse has not been input for more than 3 seconds in the drum rotating mode, [E:04] is identified, the pinch rollers are turned off and stopped, and the power is turned off.	① The drum could not start or the drum rotation has stopped due to too large a load on the tape, because; 1) The tape tension is abnormally high; 2) The tape is damaged or a foreign object (grease, etc.) adheres to the tape. ② The drum FG pulse did not reach the System controller CPU because; 1) The signal circuit is disconnected in the middle; 2) The FG pulse generator (hall device) of the drum is faulty. ③ The drum control voltage (DRUM CTL V) is not supplied to the MDA. ④ Power is not supplied to the drum MDA.
E05: Cassette Eject EMG	When the eject operation does not complete in 3 seconds after the start, [E:05] is identified, the pinch rollers are turned off and stopped, and the power is turned off. When the cassette insertion operation does not complete in 3 seconds after the start, the cassette is ejected. In addition, when the operation does not complete within 3 seconds after the start, [E:05] is also identified and the power is turned off immediately.	① The cassette cannot be ejected due to a failure in the drive mechanism of the housing. ② When the housing load increases during ejection, the loading motor is stopped because of lack of headroom in its drive torque. Housing load increasing factors: Temperature environment (low temperature, etc.), mechanism wear or failure. ③ The sensor/switch for detecting the end of ejection are not functioning normally. ④ The loading motor drive voltage is lower than specified or power is not supplied to the motor (MDA). ⑤ When the user attempted to eject a cassette, a foreign object (or perhaps the user's hand) was caught in the opening of the housing.
E06: Capstan FG EMG	When the capstan FG pulse has not been generated for more than 1 second in the capstan rotating mode, [E:06] is identified, the pinch rollers are turned off and stopped, and the power is turned off.However, the capstan EMG is not detected in STILL/SLOW/FF/REW modes.	① The capstan could not start or the capstan rotation has stopped due to too large a load on the tape, because; 1) The tape tension is abnormally high (mechanical lock); 2) The tape is damaged or a foreign object (grease, etc.) is adhered to the tape (occurrence of tape entangling, etc.). ② The capstan FG pulse did not reach the System controller CPU because; 1) The signal circuit is disconnected in the middle; 2) The FG pulse generator (MR device) of the capstans is faulty. ③ The capstan control voltage (CAPSTAN CTL V) is not supplied to the MDA. ④ Power is not supplied to the capstan MDA.
E07: SW Power Short-Circuit EMG	When short-circuiting of the SW power supply with GND has lasted for 0.5 second or more, [E:07] is identified, all the motors are stopped and the power is turned off.	① The SW 5 V power supply circuit is shorted with GND. ② The SW 12 V power supply circuit is shorted with GND.
E08: DD Initialized (Absolute Position Sensor) EMG	When DD tilting does not complete in 4 seconds, [E:08] is identified, the tilt motor is stopped and the power is turned off.	① The absolute value sensor is defective. (The soldered parts have separated.) ② The pull-up resistor at the absolute sensor output is defective. (The soldered parts have separated.) ③ Contact failure or soldering failure of the pins of the connector (board-to-board) to the absolute value sensor. ④ The absolute value sensor data is not sent to the System Controller CPU.
E09: DD FG EMG	When the DD FG pulse is not generated within 2.5 seconds, [E:09] is identified, the tilt motor is stopped and the power is turned off.	① The FG sensor is defective. (The soldered parts have separated.) ② The pull-up resistor at the FG sensor output is defective. (The soldered parts have separated.) ③ Contact failure or soldering failure of the pins of the connector (board-to-board) to the FG sensor. ④ The power to the sensor is not supplied. (Connection failure/soldering failure) ⑤ The FG pulse is not sent to the System Controller CPU. ⑥ The tilt motor is defective. (The soldered parts have separated.) ⑦ The drive power to the tilt motor is not supplied. (Connection failure/soldering failure) ⑧ The tilt motor drive MDA - IC is defective. ⑨ Auto-recovery of the DD tilting cannot take place due to overrun.
E0A: Supply Reel Pulse EMG	When the supply reel pulse has not been generated for more than 10 seconds in the capstan rotating mode, [E:0A] is identified and the cassette is ejected (but the power is not turned off). However, note that the reel EMG is not detected in the SLOW/STILL mode.	① The supply reel pulse is not generated in the FWD transport mode (PLAY/FWD SEARCH/FF, etc.) because; 1) PLAY/FWD or SEARCH/FF is started while the tape in the inserted cassette is cut in the middle; 2) A mechanical factor caused tape slack inside and outside the supply reel side of the cassette shell. In this case, the supply reel will not rotate until the tape slack is removed by the FWD transport, so the pulse is not generated until then; 3) The FG pulse output from the supply reel sensor is absent. ② The take-up reel pulse is not generated in the REV transport mode (REV SEARCH/REW, etc.). 1) REV SEARCH/REW is started when the tape in the inserted cassette has been cut in the middle; 2) A mechanical factor caused tape slack inside and outside the take-up reel side of the cassette shell. In this case, the supply reel will not rotate until the tape slack is removed by the REV transport, so the pulse will not be generated until that time; 3) The FG pulse output from the take-up reel sensor is absent. ③ The power to a reel sensor is not supplied.
EC1 or EU1: Head clog warning	Presupposing the presence of the control pulse output in the PLAY mode, when the value obtained by mixing the two V.FM output channels (without regard to the A.FM output) has remained below a certain threshold level for more than 10 seconds, [E:C1] or [E:U1] is identified and recorded in the emergency history. During the period in which a head clog is detected, the FDP and OSD repeat the "3-second warning display" and "7-second noise picture display" alternately. EMG code : "E:C1" or "E:U1" / FDP : "U:01" / OSD : "Try cleaning tape." or "Use cleaning cassette." The head clog warning is reset when the above-mentioned threshold has been exceeded for more than 2 seconds or the mode is changed to another mode than PLAY.	

Table 1-6-1

1.6.4 Emergency detail information ①

The status (electrical operation mode) of the VCR and the status (mechanism operation mode/sensor information) of the mechanism in the latest emergency can be confirmed based on the figure in EMG detail information ①.

[FDP display]

∗1 : ∗2 : 34

∗1 : Deck operation mode at the moment of emergency
∗2 : Mechanism operation mode at the moment of emergency
3– : Mechanism sensor information at the moment of emergency
–4 : Mechanism mode position at the moment of emergency

Note:

- ***In the Deck operation mode/Mechanism operation mode/ Mechanism mode position, the contents of the code that is shown on the FDP differs depending on the parts number of the System Control microprocessor (IC3001) of the VCR.***
  For the microprocessor parts number that starts with the two letters "MN", refer to the Table of MN and for parts number with "HD", refer to the Table of HD.

∗1 : Deck Operation Mode
[Table of MN]

Display	Deck Operation Mode
00	Mechanism being initialized
01	STOP with pinch roller pressure off (or tape present with P.OFF)
02	STOP with pinch roller pressure on
03	POWER OFF as a result of EMG
04	PLAY
0C	REC
10	Cassette ejected
20	FF
21	Tape fully loaded, START sensor ON, short FF
22	Cassette identification FWD SEARCH before transition to FF (SP x7-speed)
24	FWD SEARCH (variable speed) including x2-speed
2C	INSERT REC
40	REW
42	Cassette identification REV SEARCH before transition to REW (SP x7-speed)
44	REV SEARCH (variable speed)
4C	AUDIO DUB
6C	INSERT REC (VIDEO + AUDIO)
84	FWD STILL/SLOW
85	REV STILL/SLOW
8C	REC PAUSE
8D	Back spacing
8E	Forward spacing (FWD transport mode with BEST function)
AC	INSERT REC PAUSE
AD	INSERT REC Back spacing
CC	AUDIO DUB PAUSE
CD	AUDIO DUB Back spacing
EC	INSERT REC (VIDEO + AUDIO) PAUSE
ED	INSERT REC (VIDEO + AUDIO) Back spacing

[Table of HD]

Display	Deck Operation Mode
00	STOP with pinch roller pressure off (or tape present with P.OFF)
01	STOP with pinch roller pressure on
04	PLAY
0E	REC
11	Cassette ejected
22	FF
26	FWD SEARCH (variable speed) including x2-speed
2E	INSERT REC
43	REW
47	REV SEARCH (variable speed)
4C	AUDIO DUB
6E	INSERT REC (VIDEO+AUDIO)
84	FWD STILL/SLOW
85	REV STILL/SLOW
8F	REC PAUSE
AF	INSERT REC PAUSE
CD	AUDIO DUB PAUSE
EF	INSERT REC (VIDEO+AUDIO) PAUSE

∗2 : Mechanism Operation Mode
[Table of MN]

Display	Mechanism Operation Mode
00	Command standby (Status without executing command)
02	POWER OFF by EMG occurrence
04	Moving to the adjacent position in the LOAD direction
06	Moving to the adjacent position in the UNLOAD direction
08	Cassette ejection being executed
0A	Cassette insertion being executed
0C	Tape being loaded
0E	Tape being unloaded
10	Mode transition to STOP with pinch roller compression ON
12	Mode transition to STOP with pinch roller compression OFF
14	Mode transition to STOP with pinch roller compression OFF as a result of POWER OFF
16	Mode transition to STOP with pinch roller compression ON as a result of POWER ON
18	Mode transition to PLAY
1A	Mode transition to FWD SEARCH
1C	Mode transition to REC
1E	Mode transition to FWD STILL/SLOW
20	Mode transition to REV STILL/SLOW
22	Mode transition to REV SEARCH
24	Mode transition from FF/REW to STOP
26	Mode transition to FF
28	Mode transition to REW
2A	4 sec. of REV as a result of END sensor going ON during loading
2C	Short FF/REV as a result of tape sensor going ON during unloading
2E	Mechanism position being corrected due to overrun
80	Mechanism in initial position (Dummy command)

[Table of HD]

Display	Mechanism Operation Mode
00	STOP with pinch roller pressure off
01	STOP with pinch roller pressure on
02	U/L STOP (or tape being loaded)
04	PLAY
05	PLAY (x1-speed playback using JOG)
0E	REC
11	Cassette ejected
22	FF
26	FWD SEARCH (variable speed) including x2-speed
2E	INSERT REC
43	REW
47	REV SEARCH
4C	AUDIO DUB
6E	INSERT REC (VIDEO + AUDIO)
84	FWD STILL/SLOW
85	REV STILL/SLOW
8F	REC PAUSE
AF	INSERT REC PAUSE
C7	REV SEARCH (x1-speed reverse playback using JOG)
CD	AUDIO DUB PAUSE
EF	INSERT REC (VIDEO + AUDIO) PAUSE
F0	Mechanism being initialized
F1	POWER OFF as a result of EMG
F2	Cassette being inserted
F3	Cassette being ejected
F4	Transition from STOP with pinch roller pressure on to STOP with pinch roller pressure off
F5	Transition from STOP with pinch roller pressure on to PLAY
F6	Transition from STOP with pinch roller pressure on to REC
F7	Cassette type detection SEARCH before FF/REW is being executed
F8	Tape being unloaded
F9	Transition from STOP with pinch roller pressure off to STOP with pinch roller pressure on
FA	Transition from STOP with pinch roller pressure off to FF/REW
FB	Transition from STOP with pinch roller pressure off to REC.P (T.REC,etc.)
FC	Transition from STOP with pinch roller pressure off to cassette type detection SEARCH
FD	Short REV being executed after END sensor on during unloading
FE	Tension loosening being executed after tape loading (STOP with pinch roller pressure on)

3– : Mechanism Sensor Information
[Common table of MN and HD]

Display	Mechanism Sensor Information			
	S-VHS SW	REC SAFETY SW	START SENSOR	END SENSOR
0–	VHS	Tab broken	ON	ON
1–	VHS	Tab broken	ON	OFF
2–	VHS	Tab broken	OFF	ON
3–	VHS	Tab broken	OFF	OFF
4–	VHS	Tab present	ON	ON
5–	VHS	Tab present	ON	OFF
6–	VHS	Tab present	OFF	ON
7–	VHS	Tab present	OFF	OFF
8–	S-VHS	Tab broken	ON	ON
9–	S-VHS	Tab broken	ON	OFF
A–	S-VHS	Tab broken	OFF	ON
B–	S-VHS	Tab broken	OFF	OFF
C–	S-VHS	Tab present	ON	ON
D–	S-VHS	Tab present	ON	OFF
E–	S-VHS	Tab present	OFF	ON
F–	S-VHS	Tab present	OFF	OFF

–4 : Mechanism Mode Position
[Table of MN]

Display	Mechanism Mode Position
-0	Initial value
-1	EJECT position
-2	Housing operating
-3	U/L STOP position
-4	Tape being loaded/unloaded (When the pole base is located on the front side of the position just beside the drum)
-5	Tape being loaded/unloaded (When the pole base is located on the rear side of the position just beside the drum)
-6	Pole base compressed position
-7	FF/REW position
-8	Between FF/REW and STOP with pinch roller compression ON
-9	STOP with pinch roller compression OFF
-A	Between STOP with pinch roller compression OFF and REV
-B	REV (REV STILL/SLOW) position
-C	Between REV and FWD
-D	FWD (FWD STILL/SLOW) position
-E	Between FWD and PLAY
-F	PLAY position

[Table of HD]

Display	Mechanism Mode Position
–0	EJECT position
–1	U/L STOP position
–2	Tape being loaded/unloaded (When the pole base is located on the rear side of the position just beside the drum)
–3	FF/REW position
–4	STOP with pinch roller pressure off
–5	REV (REV STILL/SLOW) position
–6	FWD (FWD STILL/SLOW) position, PLAY position
–7	Intermediate position during transition between other mechanism modes

Note:

- ***As the display is always "–7" at any intermediate position between mechanism modes, the position of transitory EMG may sometimes not be locatable.***

1.6.5 Emergency detail information ②

The type of the cassette tape and the cassette tape winding position can be confirmed based on the figure in EMG detail information ②.

[FDP display]

★5 : ★6 : ★7

★5 : Type of the cassette tape in use ①
★6 : Winding position of the cassette tape in use
★7 : Type of the cassette tape in use ②(Winding area)

Note:

- ***EMG detail information② is the reference information stored using the remaining tape detection function of the cassette tape. As a result, it may not identify cassette correctly when a special cassette tape is used or when the tape has variable thickness.***

★5 : Cassette tape type ①

Display	Cassette Tape Type ①
00	Cassette type not identified
16	Large reel/small reel (T-0 to T-15/T-130 to T-210) not classified
82	Small reel, thick tape (T-120) identified/thin tape (T-140) identified
84	Large reel (T-0 to T-60) identified
92	Small reel, thick tape (T-130) identified/thin tape (T-160 to T-210) identified
93	Small reel, thick tape/C cassette (T-0 to T-100/C cassette) not classified
C3	Small reel, thick tape/C cassette (T-0 to T-100/C cassette) being classified
D3	Small reel, thick tape/C cassette (T-0 to T-100/C cassette) being classified
E1	C cassette, thick tape (TC-10 to TC-20) identified
E2	Small reel, thick tape (T-0 to T-100) identified
E9	C cassette, thin tape (TC-30 to TC-40) identified
F1	C cassette, thick tape/thin tape (TC-10 to TC-40) not classified

Notes:

- ***Cassette tape type ① is identified a few times during mode transition and the identification count is variable depending on the cassette tape type. If an EMG occurs in the middle of identification, the cassette tape type may not be able to be identified.***
- ***If other value than those listed in the above table is displayed, the cassette tape type is not identified.***

★6 : Cassette tape winding position

The cassette tape winding position at the moment of EMG is displayed by dividing the entire tape (from the beginning to the end) in 22 sections using a hex number from "00" to "15".

"00" : End of winding
"15" : Beginning of winding
"FF" : Tape position not identified

★7 : Cassette tape type ② (Winding area)

Display	Cassette Tape Type ②	
00	Cassette type not identified	
07	Small reel, thick tape	T-5
08 - 0E	C cassette, thick tape	TC-10
09 - 15	C cassette, thick tape	TC-20P
0A - 0B	Small reel, thick tape	T-20
0A - 16	C cassette, thin tape	TC-30
0A - 16	C cassette, thin tape	TC-40
0D - 0F	Small reel, thick tape	T-40
11 - 14	Small reel, thick tape	T-60
15 - 18	Small reel, thick tape	T-80/DF-160
17 - 1A	Small reel, thick tape	T-80/DF-180
19 - 1D	Small reel, thick tape	T-100
1D - 21	Small reel, thick tape	T-120/DF-240
1E - 1F	Small reel, thin tape	T-140
1F - 23	Small reel, thick tape	T-130
21 - 23	Small reel, thin tape	T-160
21 - 23	Small reel, thin tape	T-168
22 - 24	Small reel, thick tape	DF-300
22 - 24	Small reel, thin tape	T-180/DF-380
22 - 24	Small reel, thin tape	T-210/DF-420
22 - 23	Large reel	T-5
23 - 24	Large reel	T-10
25 - 26	Large reel	T-20
27 - 29	Large reel	T-30
29 - 2B	Large reel	T-40
2D - 2F	Large reel	T-60

Note:

- ***The values of cassette tape type ② in the above table are typical values with representative cassette tapes.***

1.7 SERVICING THE VIDEO NAVIGATION FUNCTION

The video navigation function is to record data to the built-in FLASH memory of the VCR. At the same time a reference number is wrote on the cassette tape for control purposes. Therefore, the FLASH memory and the cassette tape (self-recorded tape) form a related pair. If the FLASH memory or the board assembly (in which the FLASH memory is included) is replaced, the video navigation function will not operate. In this case, it is required to copy the video navigation data in the original FLASH memory into the FLASH memory of the unit which the navigation function is available.

1.7.1 Copying the video navigation data

Notes:

- ***When copying the video navigation data, initialization of the FLASH memory of the master unit is required.***
- ***Connect the JLIP cable to each "JLIP terminal" of the VCR.***
  JLIP Cable (Parts No. : QAM0129-001 or PEAC0453)

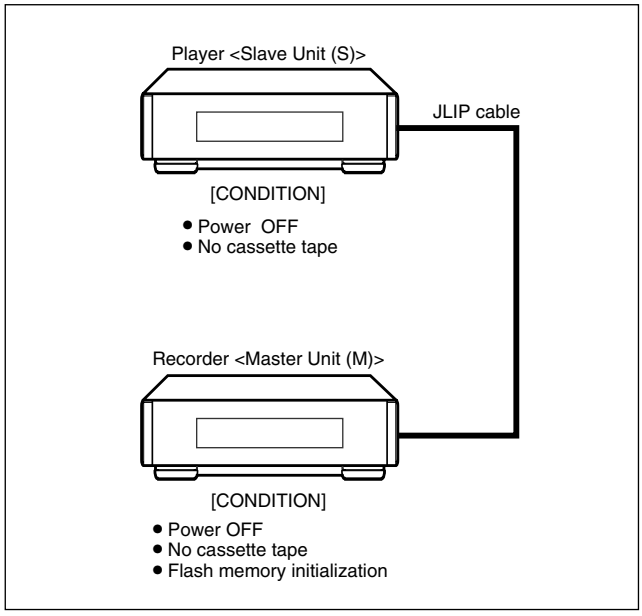


Fig. 1-7-1a Connection diagram

(1) Turn [OFF] the power of the 2 units (slave and master) VCR and set it without a cassette tape.

(2) Press the [PLAY] button of the slave unit for 7 seconds. When the copy mode is set, [1] will be displayed on the FDP.

FDP : [1] (S)

Note:

- ***To cancel the copy mode, press the [PLAY] button of the slave unit, then the copy mode of the slave unit will be cancelled.***

(3) Press the [PAUSE] button of the master unit for 7 seconds. When the copy mode is set, [2] will be displayed on the FDP.

FDP : [2] (M)

Note:

- ***To cancel the copy mode, press the [PAUSE] button of the master unit, then the copy mode of the master unit will be cancelled.***

(4) Press the [STOP] button of the master unit.
When copying is started, [3] will be displayed on the FDP and when copying is completed the FDP display changes from [3] to [4].
When an error occurs during the copying process, [5] will be displayed on the FDP. During such an occurrence the slave unit FDP display is [1].

FDP : [1] (S)

FDP : [3] (M)

<Completed>
FDP : [4] (M)

<Error>
FDP : [5] (M)

(5) Press the [STOP] button of the master unit.
The copy mode of the master and slave unit will be cancelled simultaneously.

1.7.2 Erasing the video navigation data (Initialization)

This is the service mode to erase all the video navigation data inside the FLASH memory. When a unit is replaced or after an operations check, erase the data which is not required while observing the TV screen.

Notes:

- ***During Flash memory initialization, the transmission of the jig code may affect the peripheral VCR. Therefore, when initializing the Flash memory, be sure to unplug the peripheral VCR power cable.***
- ***Please take note that after erasing data cannot be restored, therefore care must be exercised.***
- ***When using the Jig RCU. set its custom code to match the custom code of the VCR.***

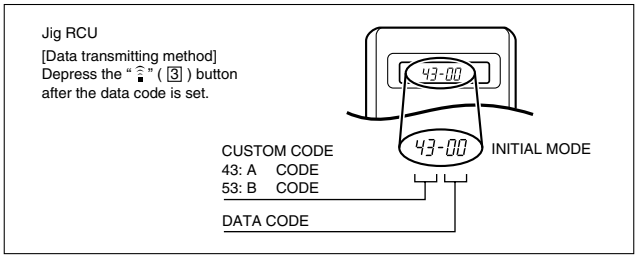


Fig. 1-7-2a Jig RCU [PTU94023B]

(1) Turn ON the power.
(2) Transmit the code "7F" from the Jig RCU.
(3) Transmit the code "FC" from the Jig RCU.
Then the [FLASH MEMORY UTILITIES] screen is displayed. (See Fig. 1-7-2c.)
(4) Transmit the code "21" from the Jig RCU.
Select [1. ERASE], then ERASE starts. During erase [PLEASE WAIT] is displayed and when erase is completed [ERASED] will be displayed. (See Fig. 1-7-2d and Fig. 1-7-2e.)
(5) Transmit the code "23" from the Jig RCU, then the mode is cancelled. (See Fig. 1-7-2b.)

Fig. 1-7-2b

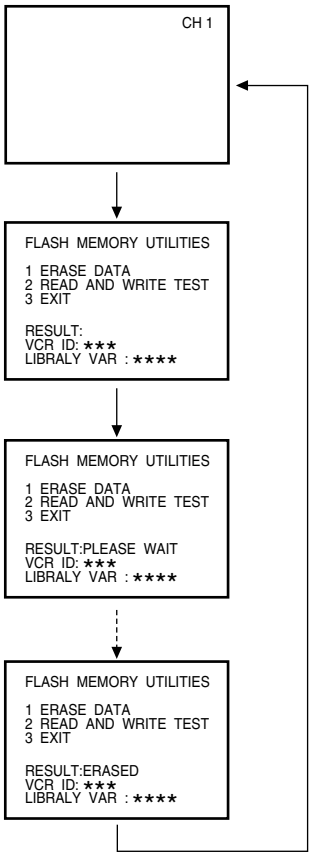


Fig. 1-7-2c

Fig. 1-7-2d

Fig. 1-7-2e

1.7.3 Factory setting level during shipment

After shipment from the factory, this is the service mode to return the rewritten EEPROM data to the factory setting level [Factory reset].

Note:

- ***When this operation is executed, all user's setting contents will return to the factory setting level, therefore care must be exercised.***

(1) Insert a cassette tape.
(2) Transmit the code "6F" from the Jig RCU.
(3) After a setting is completed, the cassette tape is automatically ejected.

SECTION 2
MECHANISM ADJUSTMENT

2.1 BEFORE STARTING REPAIR AND ADJUSTMENT

2.1.1 Precautions

(1) Unplug the power cable of the main unit before using your soldering iron.
(2) Take care not to cause any damage to the conductor wires when plugging and unplugging the connectors.
(3) Do not randomly handle the parts without identifying where the trouble is.
(4) Exercise enough care not to damage the lugs, etc. during the repair work.
(5) When installing the front panel assembly, be sure to hook the lug on the back side of the cassette door to the door opener of the cassette holder. If this operation is neglected it will not be possible to remove the cassette when ejecting because the housing door cannot be opened.

2.1.2 Checking for Proper Mechanical Operations

Enter the mechanism service mode when you want to operate the mechanism when no cassette is loaded. (See 1.5 MECHANISM SERVICE MODE.)

2.1.3 Manually Removing the Cassette Tape

1. In case of electrical failures

If you cannot remove the cassette tape which is loaded because of any electrical failure, manually remove it by taking the following steps.

(1) Unplug the power cable and remove the top cover, bracket and front panel assembly. (See 1.3 DISASSEMBLY/ASSEMBLY METHOD.)
(2) Unload the cassette by manually turning the loading motor of the mechanism assembly toward the front. In doing so, hold the tape by the hand to keep the slack away from any grease. (See Fig.2-1-3a.)
(3) Bring the pole base assembly (supply or take-up side) to a pause when it reaches the position where it is hidden behind the cassette tape.
(4) Move the top guide toward the drum while holding down the lug Ⓐ of the bracket retaining the top guide. Likewise hold part Ⓑ down and remove the top guide. Section Ⓒ of the top guide is then brought under the cassette lid. Then remove the top guide by pressing the whole cassette tape down. (See Fig.2-1-3b.)
(5) Remove the cassette tape by holding both the slackened tape and the cassette lid.
(6) Take up the slack of the tape into the cassette. This completes removal of the cassette tape.

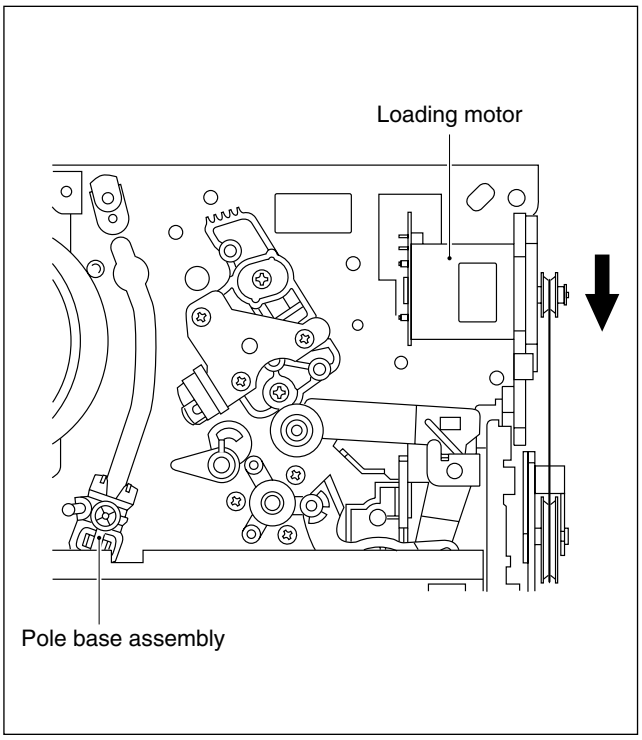


Fig. 2-1-3a

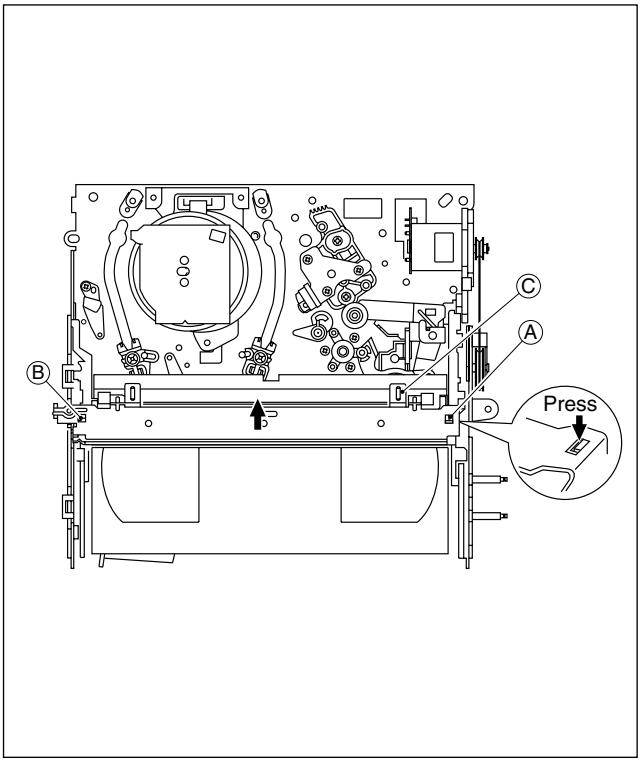


Fig. 2-1-3b

2. In case of mechanical failure

If you cannot remove the cassette tape which is loaded because of any mechanical failure, manually remove it by taking the following steps.

(1) Unplug the power cable and remove the top cover, front panel assembly and others so that the mechanism assembly is visible. (See 1.3 DISASSEMBLY/ASSEMBLY METHOD.)

(2) While keeping the tension arm assembly of the mechanism assembly free from tension, pull the tape on the pole base assembly (supply or take-up side) out of the guide roller. (See Fig.2-1-3c.)

(3) Take the spring of the pinch roller arm assembly off the hook of the press lever assembly, and detach it from the tape. (See Fig.2-1-3d.)

(4) In the same way as in the electrical failure instructions in 2.1.3-1(4), remove the top guide.

(5) Raise the cassette tape cover. By keeping it in that position, draw out the cassette tape case from the cassette holder and take out the tape.

(6) By hanging the pinch roller arm assembly spring back on the hook, take up the slack of the tape into the cassette.

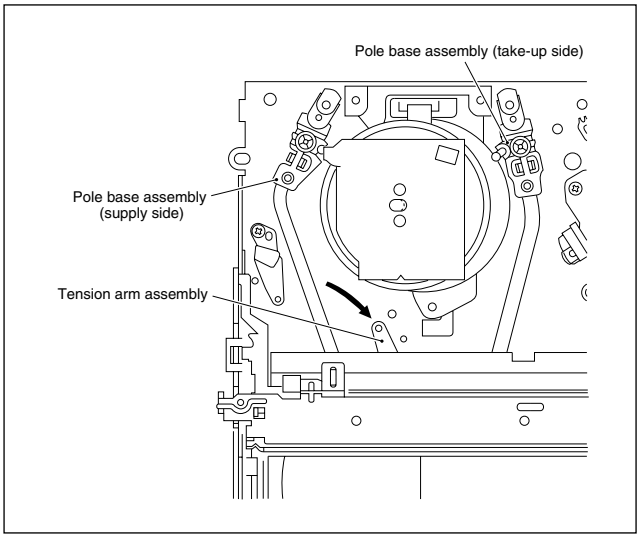


Fig. 2-1-3c

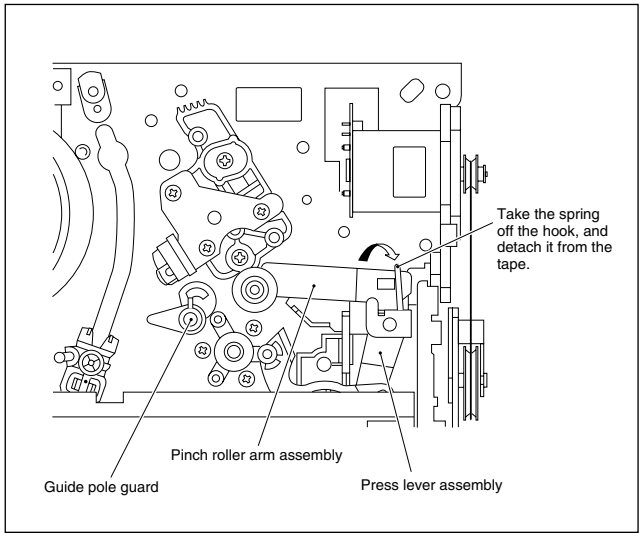
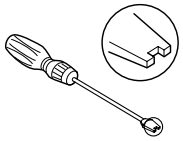
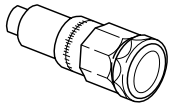
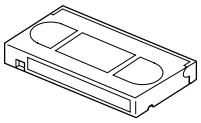
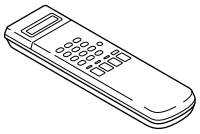
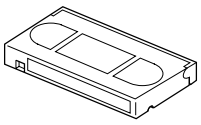
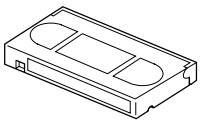


Fig. 2-1-3d

2.1.4 Jigs and Tools Required for Adjustment

Roller driver PTU94002	A/C head positioning tool PTU94010	Torque gauge PUJ48075-2
		
Back tension cassette gauge PUJ48076-2	Jig RCU PTU94023B	
		
Alignment tape (SP, stairstep, PAL) MHPE	Alignment tape (LP, stairstep, PAL) MHPE-L	
		

2.1.5 Maintenance and Inspection

1. Location of major mechanical parts

In this chapter, the two mechanism speeds are described by comparing the speeds of the standard type and the high-speed FF/REW type.
It is possible to distinguish between these two types of mechanism by the diameters of their capstan pulleys.
The capstan pulley diameter for the standard type is approx. 32 mm.
The capstan pulley diameter for the high-speed FF/REW type is approx. 43 mm.
For information on the different parts used in the two mechanism types, please refer to the “Replacement of major parts”.

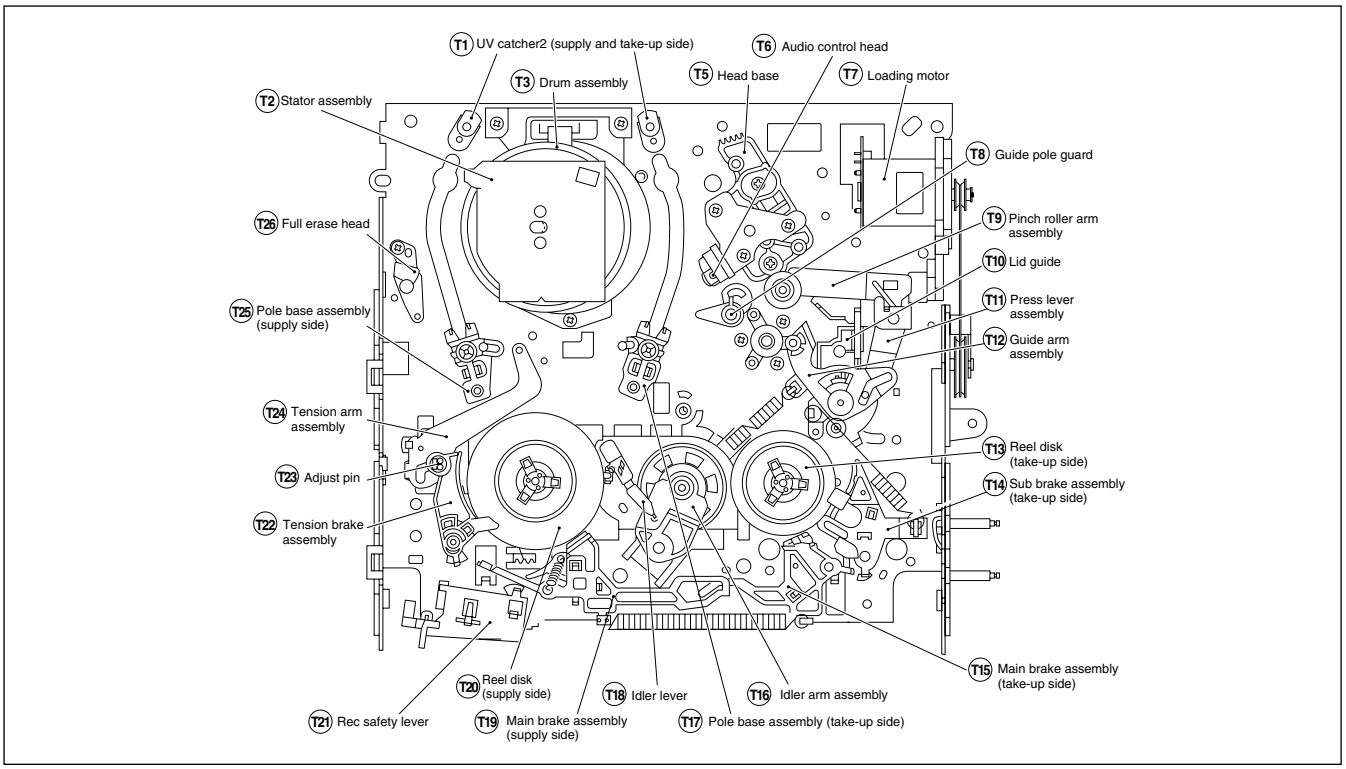

T1 UV catcher2 (supply and take-up side)
T6 Audio control head
T5 Head base
T7 Loading motor
T3 Drum assembly
T2 Stator assembly
T8 Guide pole guard
T26 Full erase head
T9 Pinch roller arm assembly
T10 Lid guide
T25 Pole base assembly (supply side)
T11 Press lever assembly
T12 Guide arm assembly
T24 Tension arm assembly
T13 Reel disk (take-up side)
T23 Adjust pin
T14 Sub brake assembly (take-up side)
T22 Tension brake assembly
T15 Main brake assembly (take-up side)
T20 Reel disk (supply side)
T18 Idler lever
T16 Idler arm assembly
T21 Rec safety lever
T19 Main brake assembly (supply side)
T17 Pole base assembly (take-up side)

Fig. 2-1-5a Mechanism assembly top side

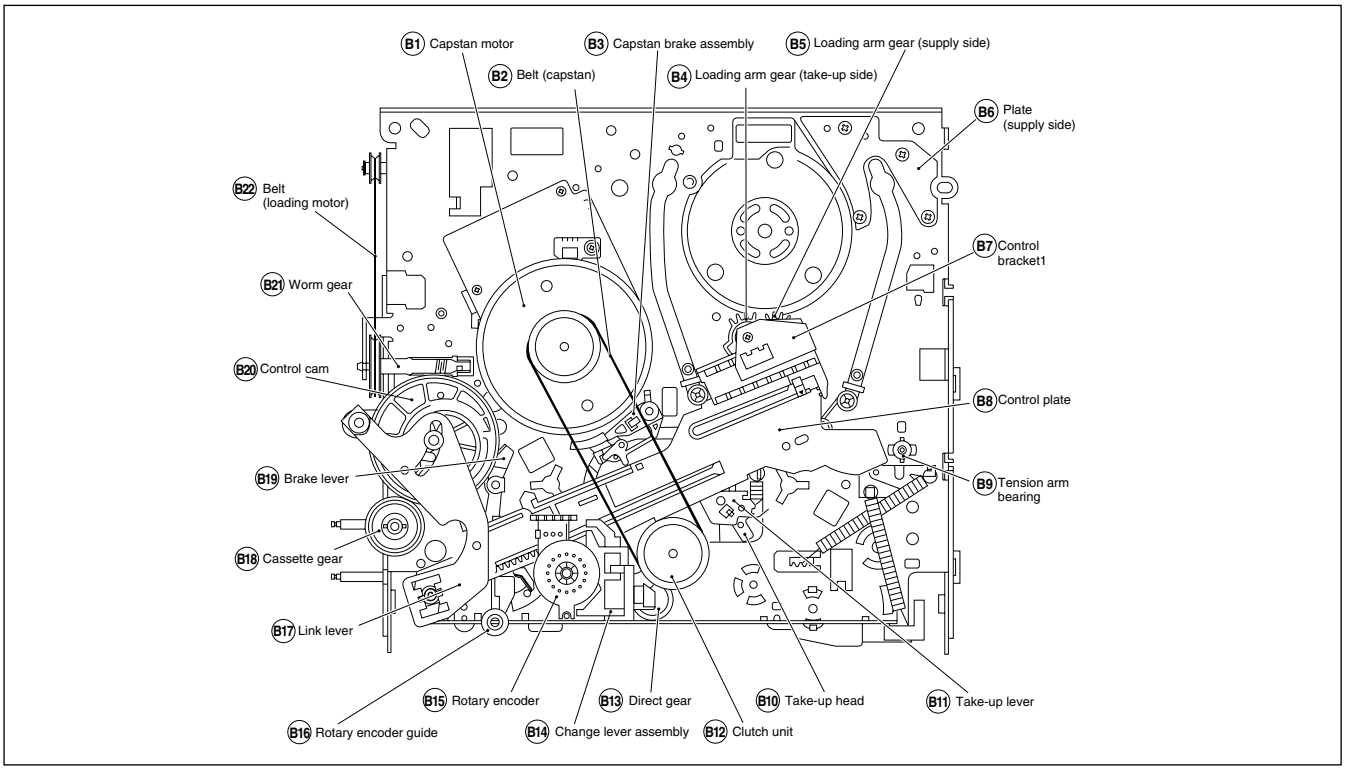


Fig. 2-1-5b Mechanism assembly bottom side

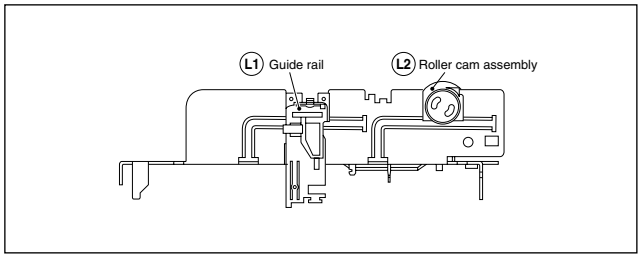


Fig. 2-1-5c Mechanism assembly left side

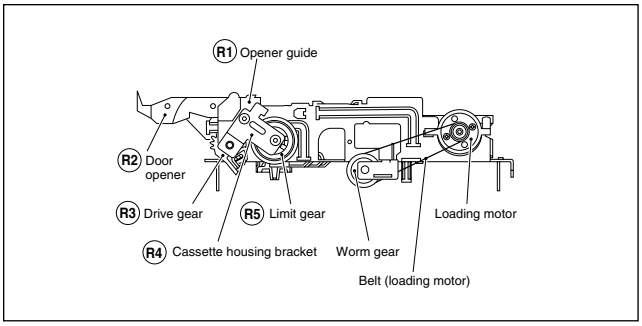


Fig. 2-1-5d Mechanism assembly right side

2. Cleaning

Regular cleaning of the transport system parts is desirable but practically impossible. So make it a rule to carry out cleaning of the tape transport system whenever the machine is serviced.

When the video head, tape guide and/or brush get soiled, the playback picture may appear inferior or at worst disappear, resulting in possible tape damage.

(1) When cleaning the upper drum (especially the video head), soak a piece of closely woven cloth or Kimu-wipe with alcohol and while holding the cloth onto the upper drum by the fingers, turn the upper drum counterclockwise.

Note:

- ***Absolutely avoid sweeping the upper drum vertically as this will cause damage to the video head.***

(2) To clean the parts of the tape transport system other than the upper drum, use a piece of closely woven cloth or a cotton swab soaked with alcohol.

(3) After cleaning, make sure that the cleaned parts are completely dry before using the video tape.

3. Lubrication

With no need for periodical lubrication, you have only to lubricate new parts after replacement. If any oil or grease on contact parts is soiled, wipe it off and newly lubricate the parts.

Note:

- ***See the "mechanism assembly" diagram of the parts list for the lubricating or greasing spots, and for the types of oil or grease to be used.***

4. Suggested servicing schedule for main components

The following table indicates the suggested period for such service measures as cleaning,lubrication and replacement. In practice, the indicated periods will vary widely according to environmental and usage conditions.However, the indicated components should be inspected when a set is brought for service and the maintenance work performed if necessary. Also note that rubber parts may deform in time,even if the set is not used.

System	Parts Name	Operation Hours	
		~1000H	~2000H
Tape transport	Upper drum assembly	★○	○
	A/C head	★○	★○
	Lower drum assembly	★	★○
	Pinch roller arm assembly	★	★
	Full erase head	★	★
	Tension arm assembly	★	★
	Capstan motor (Shaft)	★	★
	Guide arm assembly	★	★
Drive	Capstan motor		○
	Capstan brake assembly		○
	Main brake assembly		○
	Belt (Capstan)	○	○
	Belt (Loading motor)		○
	Loading motor		○
	Clutch unit		○
	Worm gear		○
	Control plate		○
Other	Brush	★○	★○
	Tension brake assembly	○	○
	Rotary encoder		○

★ : Cleaning

○ : Inspection or Replacement if necessary

Table 2-1-5a

5. Disassembling procedure table

The following table indicates the order in which parts are removed for replacement. To replace parts, remove them in the order of 1 to 18 as shown in the table. To install them, reverse the removal sequence.

The symbols and numbers preceding the individual part names represent the numbers in the "Location of major mechanical parts" table. Also, the "T", "B", and "T/B" on the right of each part name shows that the particular part is removed from the front, from the back, and from both sides of the mechanism, respectively.

Symbols and numbers	Removal parts / (Reference items) Replacement parts	Front (T)/Back (B) of mechanism	Number of removal steps	L1 Guide rail	L2 Roller cam assembly	R4 Cassette housing bracket	R1 Opener guide	— Relay gear	— Cassette holder assembly	R3 Drive gear	— Drive arm	T9 Pinch roller arm assembly	T12 Guide arm assembly	T11 Press lever assembly	T1 UV catcher2	B15 Rotary encoder	B12 Clutch unit	B14 Change lever assembly	B13 Direct gear	— Clutch gear	B17 Link lever	B21 Worm gear	B7 Control bracket1	B8 Control plate	B5 Loading arm gear (supply side)	B4 Loading arm gear (take-up side)	B11 Take-up lever	T14 Sub brake assembly (take-up side)	T15 Main brake assembly (take-up side)	T13 Reel disk (take-up side)	T22 Tension brake assembly	T24 Tension arm assembly	T18 Idler lever	B19 Brake lever (*1)
L1	2.2.3 Guide rail	T	1																															
L2	2.2.3 Roller cam assembly	T	1																															
R4	2.2.3 Cassette housing bracket	T	1																															
R1	2.2.3 Opener guide	T	2			1																												
R2	2.2.3 Door opener	T	3			1	2																											
—	2.2.3 Relay gear	T	3			1	2																											
R5	2.2.3 Limit gear	T	3			1	2																											
—	2.2.3 Cassette holder assembly	T	6	1	2	3	4	5																										
R3	2.2.3 Drive gear	T	4			1	2	3																										
—	2.2.3 Drive arm	T	8	1	2	3	4	5	6	7																								
T9	2.2.4 Pinch roller arm assembly	T	1																															
T12	2.2.5 Guide arm assembly	T	1																															
T11	2.2.5 Press lever assembly	T	3									1	2																					
T6	2.2.6 Audio control head	T	1																															
T7	2.2.7 Loading motor	T	1																															
B1	2.2.8 Capstan motor	T/B	1																															
T1	2.2.9 UV catcher2	T	1																															
T17	2.2.9 Pole base assembly (take-up side)	T/B	2												1																			
T25	2.2.9 Pole base assembly (supply side)	T/B	2												1																			
B15	2.2.10 Rotary encoder	B	1																															
B12	2.2.11 Clutch unit	B	1																															
B14	2.2.12 Change lever assembly	B	3													1	2																	
B13	2.2.12 Direct gear	B	4													1	2	3																
—	2.2.12 Clutch gear	B	5													1	2	3	4															
—	2.2.12 Coupling gear (*2)	B	6													1	2	3	4	5														
B17	2.2.13 Link lever	B	1																															
B18	2.2.14 Cassette gear	B	2																		1													
B20	2.2.14 Control cam	B	2																		1													
B21	2.2.14 Worm gear	B	1																															
T10	- Lid guide	T/B	5									1	2	3								4												
B7	2.2.15 Control bracket1	B	1																															
B8	2.2.15 Control plate	B	6													1	2	3			4		5											
B5	2.2.16 Loading arm gear (supply side)	B	7													1	2	3			4		5	6										
B4	2.2.16 Loading arm gear (take-up side)	B	8													1	2	3			4		5	6	7									
—	2.2.16 Loading arm gear shaft	B	9													1	2	3			4		5	6	7	8								
B11	2.2.17 Take-up lever	T/B	7													1	2	3			4		5	6										
B10	2.2.17 Take-up head	T/B	8													1	2	3			4		5	6			7							
—	2.2.17 Control plate guide	T/B	8													1	2	3			4		5	6			7							
B3	2.2.18 Capstan brake assembly	T/B	7													1	2	3			4		5	6										
T14	2.2.19 Sub brake assembly(take-up side)	T/B	15	1	2	3	4	5	6	7	8					9	10	11			12		13	14										
T15	2.2.20 Main brake assembly(take-up side)	T/B	16	1	2	3	4	5	6	7	8					9	10	11			12		13	14				15						
T19	2.2.20 Main brake assembly(supply side)	T/B	9	1	2	3	4	5	6	7	8																							
T13	2.2.20 Reel disk (take-up side)	T/B	16	1	2	3	4	5	6	7	8					9	10	11			12		13	14				15						
T22	2.2.21 Tension brake assembly	T/B	9	1	2	3	4	5	6	7	8																							
T20	2.2.21 Reel disk (supply side)	T/B	10	1	2	3	4	5	6	7	8																					9		
T24	2.2.21 Tension arm assembly	T/B	10	1	2	3	4	5	6	7	8																					9		
B9	2.2.21 Tension arm bearing	T/B	10	1	2	3	4	5	6	7	8																					9		
T18	2.2.22 Idler lever	T/B	17	1	2	3	4	5	6	7	8					9	10	11			12		13	14								15	16	
T16	2.2.22 Idler arm assembly	T/B	18	1	2	3	4	5	6	7	8					9	10	11			12		13	14								15	16	17
B19	- Brake lever (*1)	T/B	18	1	2	3	4	5	6	7	8					9	10	11			12		13	14				15	16	17				
B16	- Rotary encoder guide	T/B	19	1	2	3	4	5	6	7	8					9	10	11			12		13	14				15	16	17				18

Table 2-1-5b

Note:

- ***The parts with marked (*) have different types of mechanisms (standard type or high-speed FF/REW type).***
  - **** 1 : Uses the standard type mechanism only.***
  - **** 2 : Uses the high-speed FF/REW type mechanism only.***

2.2 REPLACEMENT OF MAJOR PARTS

2.2.1 Before Starting Disassembling (Phase matching between mechanical parts)

The mechanism of this unit is closely linked with the rotary encoder and system controller circuits.
Since the system controller detects the status of mechanical operation in response to phases of the rotary encoder (internal switch positions), the mechanism may not operate properly unless such parts as the rotary encoder, control plate, loading arm gear, control cam, cassette gear, limit gear, relay gear and drive gear are installed in their correct positions.
Especially, this model is not provided with any cassette housing assembly, so that cassette loading and unloading must be accomplished by operation of the cassette holder assembly. The latter is in turn driven by such parts as the drive gear, relay gear and limit gear. Exercise enough care, therefore, to have the phases of all this gear matching one another. (For information on phase matching of the mechanism, see the instructions on how to install individual parts.)
This unit is provided with a mechanism assembly mode. It is therefore necessary to enter this mode for assembling and disassembling procedures.
This mode is usually not in use, manually set it when it is required.

2.2.2 How to Set the Mechanism Assembling Mode

Remove the mechanism assembly and place it bottom side up. (See SECTION 1 DISASSEMBLY.) Turn the worm gear toward the front so that the guide hole of the control cam is brought into alignment with the hole at the mechanism assembly chassis. This position renders the mechanism assembling mode operational. Make sure that the control plate is located in alignment with the mark E. (See Fig.2-2-2a.)

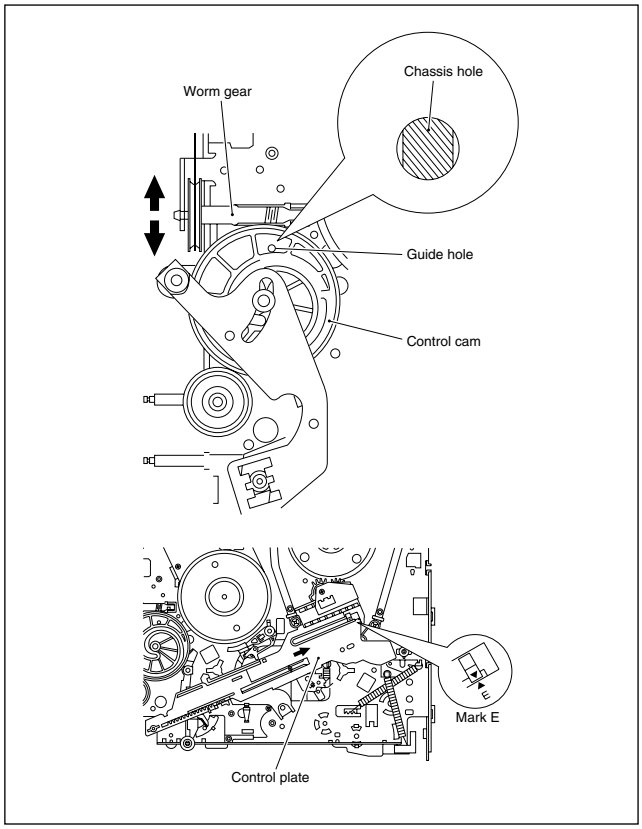


Fig. 2-2-2a

2.2.3 Cassette Holder Assembly

1. How to remove

(1) Remove the guide rail and roller cam assembly. (See Fig.2-2-3a.)
(3 lugs on the guide rail and one lug on the roller cam assembly)

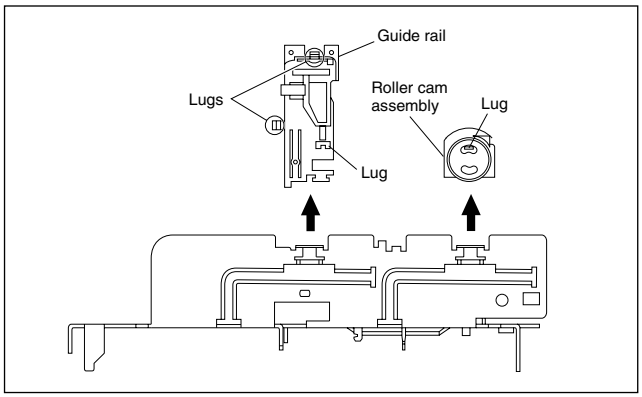


Fig. 2-2-3a

(2) Remove the two slit washers and remove the cassette housing bracket. (See Fig.2-2-3b.)
(3) Remove the opener guide, spring(A), door opener, relay gear and limit gear. (See Fig.2-2-3b.)

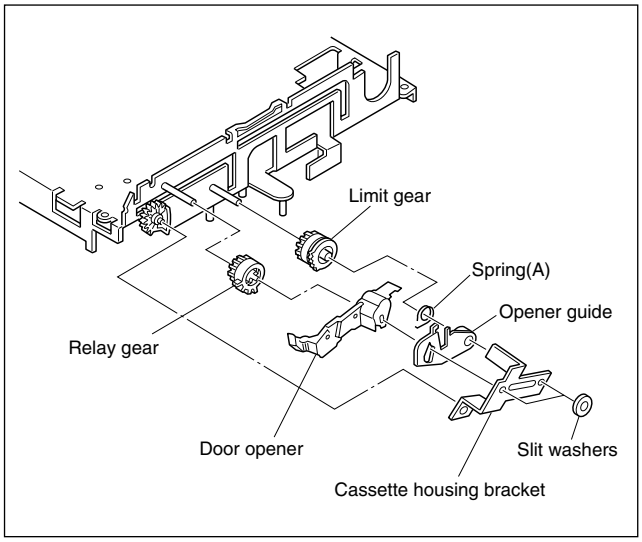


Fig. 2-2-3b

(4) While swinging the lock levers (R) and (L) of the cassette holder assembly toward the front, slide the cassette holder assembly until its legs come to where the guide rail and the roller cam assembly have been removed (so that the drive arm is upright). (See Fig.2-2-3c.)

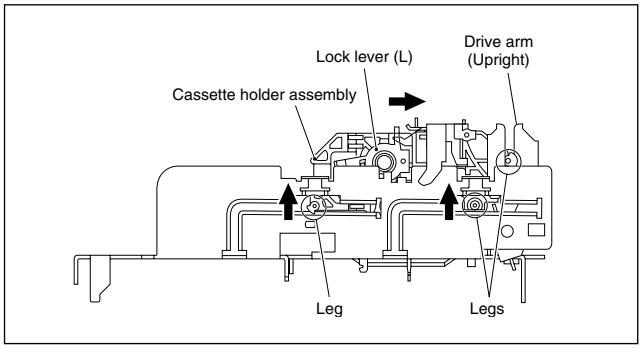


Fig. 2-2-3c

(5) While holding the left side of the cassette holder, lift the cassette holder assembly so that the three legs on the left side are all released. Then pull the legs Ⓐ and Ⓑ on the right side out of the rail and also pull up the legⒸ. (See Fig.2-2-3d and Fig.2-2-3e.)
(6) Draw out the drive gear, and remove the drive arm.

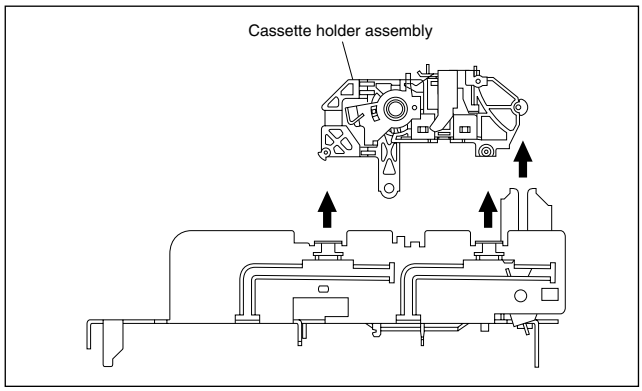


Fig. 2-2-3d

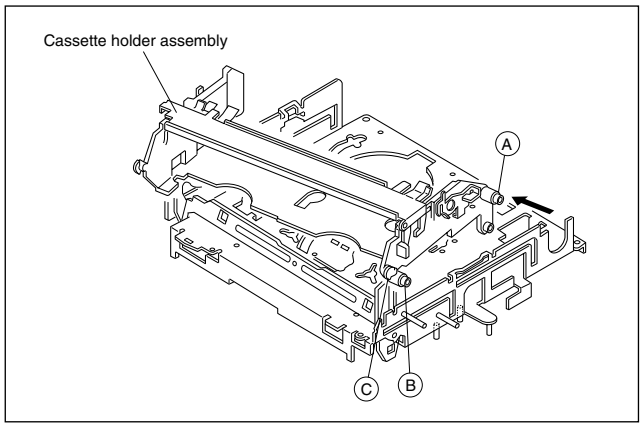


Fig. 2-2-3e

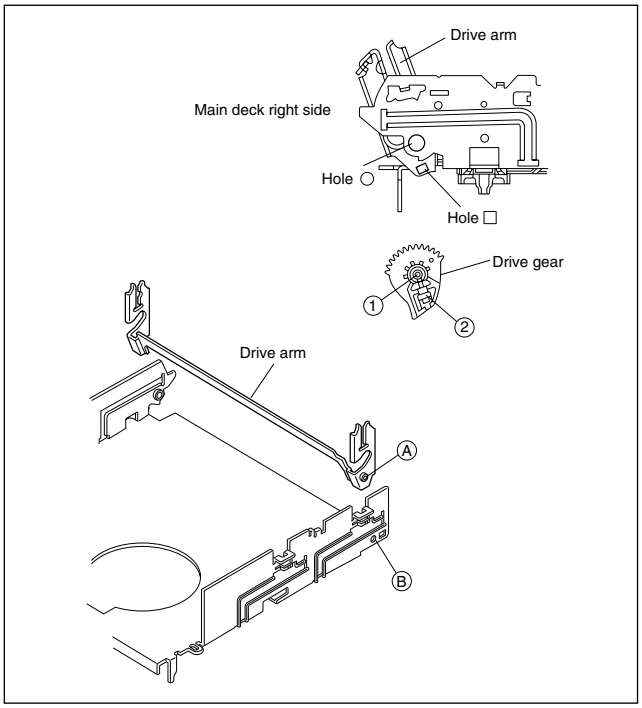


Fig. 2-2-3f

2. How to install (Phase matching)
(1) Insert the section Ⓐ of the drive arm into the section Ⓑ of the main deck.
(2) Insert the section ① of the drive gear into the round hole, and the section ② into the square hole on the drive arm. (See Fig.2-2-3f.)
(3) Hold the drive arm upright and fit the leg Ⓒ on the right side of the cassette holder assembly into the groove. (See Fig.2-2-3g.)
(4) While swinging the lock lever (R) of the cassette holder assembly toward the front, put the legs Ⓐ and Ⓑ into the rail. (See Fig.2-2-3g.)
(5) Drop the three legs on the left side of the cassette holder assembly into the groove at one time. (See Fig.2-2-3h.)
(6) Slide the whole cassette holder assembly toward the front to bring it to the eject end position.
(7) Install the limit gear so that the notch on the outer circumference of the limit gear is brought into alignment with the guide hole on the main deck. (See Fig.2-2-3i.)
(8) Install so that the notch on the periphery of the relay gear is aligned with the notch of the main deck and that hole A of the relay gear is aligned with the hole A of the limit gear and that hole B of the relay gear is aligned with the hole B of the drive gear. (See Fig.2-2-3i.)
(9) Install the door opener, opener guide, spring(A) and cassette housing bracket and fasten the two slit washers.

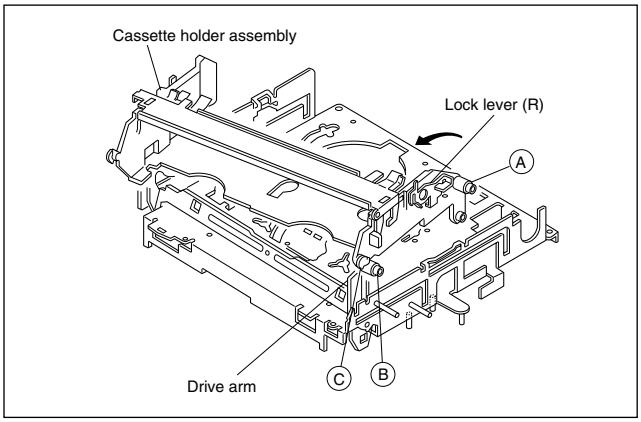


Fig. 2-2-3g

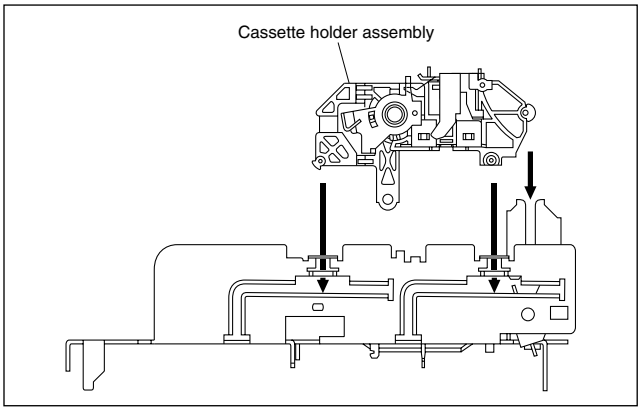


Fig. 2-2-3h

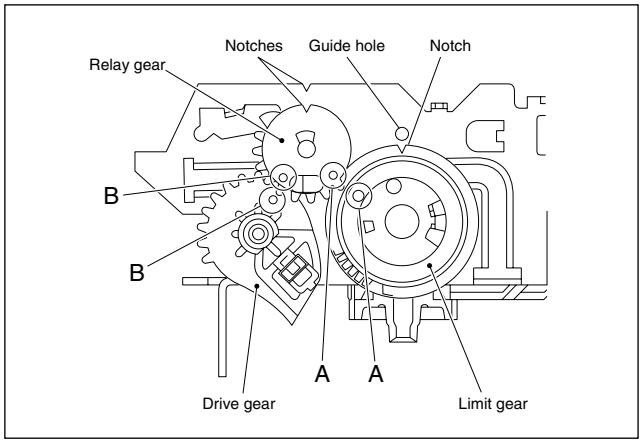


Fig. 2-2-3i

2.2.4 Pinch Roller Arm Assembly

1. How to remove

(1) Remove the spring from the hook of the press lever assembly.
(2) Remove the slit washer and remove the pinch roller seat 2. (See Fig.2-2-4a.)
(3) Remove the pinch roller arm assembly by pulling it up.

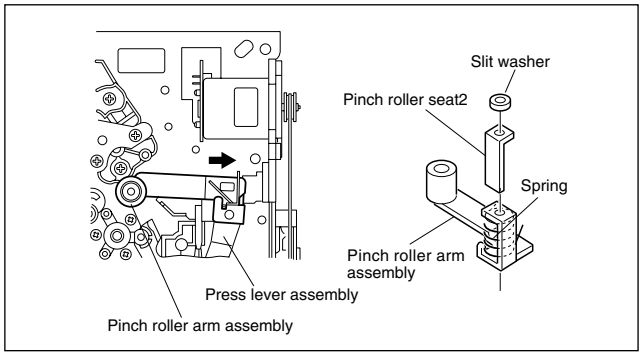


Fig. 2-2-4a

2.2.5 Guide Arm Assembly and Press Lever Assembly

1. How to remove

(1) Remove the spring and expand the lug of the lid guide in the arrow-indicated direction. Then remove the guide arm assembly by pulling it up.
(2) Remove the press lever assembly by pulling it up. (See Fig.2-2-5a.)

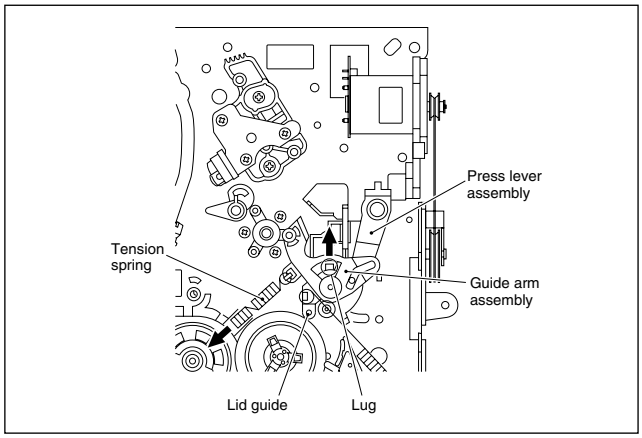


Fig. 2-2-5a

2.2.6 Audio Control Head

1. How to remove

(1) Remove the two screws (A) and remove the audio control head together with the head base.
(2) When replacing only the audio control head, remove the three screws (B) while controlling the compression spring.

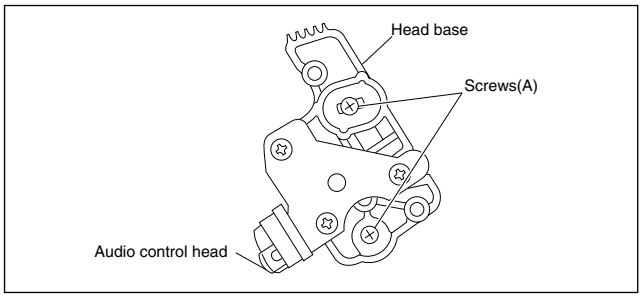


Fig. 2-2-6a

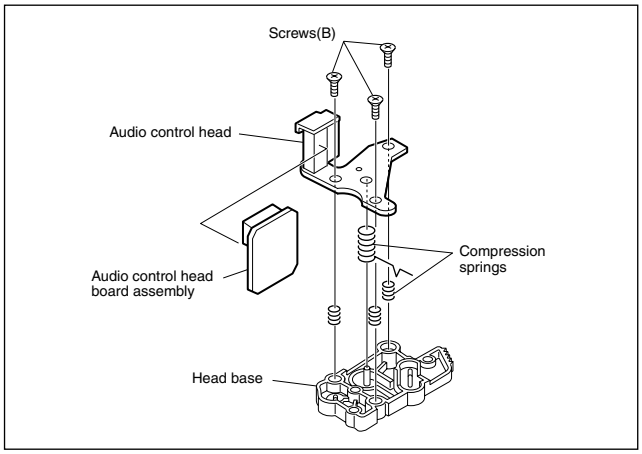


Fig. 2-2-6b

2. How to install

(1) To make the post-installation adjustment easier, set the temporary level as indicated in Fig.2-2-6c. Also make sure that the screw center (centre) is brought into alignment with the center (centre) position of the slot.

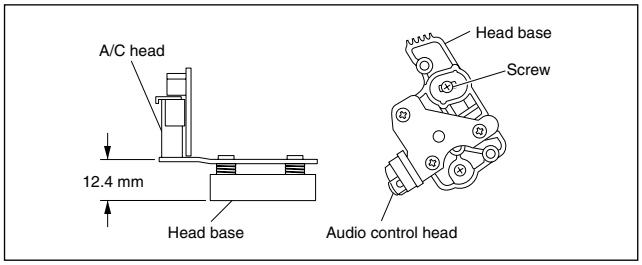


Fig. 2-2-6c

2.2.7 Loading Motor

1. How to remove

(1) Remove the belt wound around the worm gear.
(2) Open the two lugs of the motor guide and remove the loading motor, loading motor board assembly and motor guide altogether by pulling them up.
(3) When replacing the loading motor board assembly, take care with the orientation of the loading motor. (Install so that the loading motor label faces upward.)
(4) When the motor pulley has been replaced, choose the fitting dimension as indicated in Fig.2-2-7a.

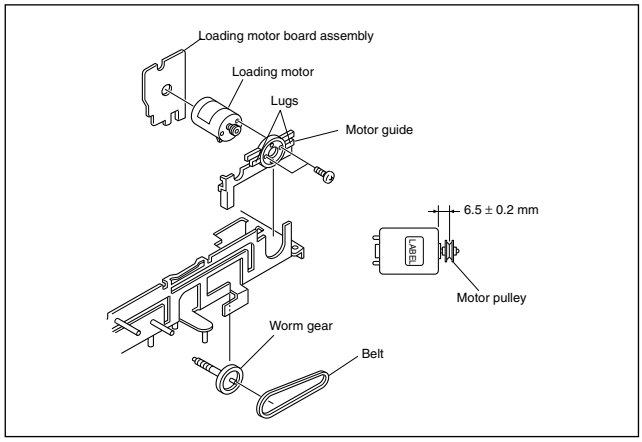


Fig. 2-2-7a

2.2.8 Capstan Motor

1. How to remove

(1) Remove the belt (capstan) on the mechanism assembly back side.
(2) Remove the three screws (A) and remove the capstan motor.

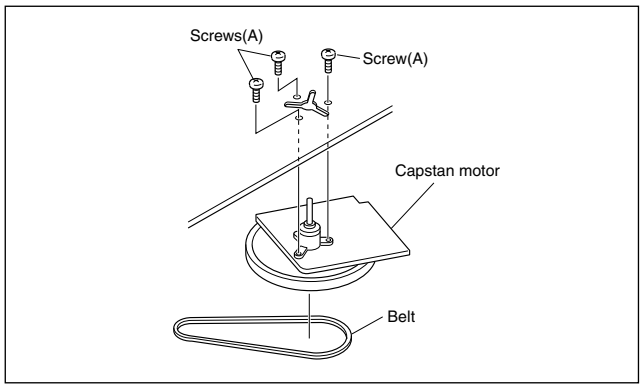


Fig. 2-2-8a

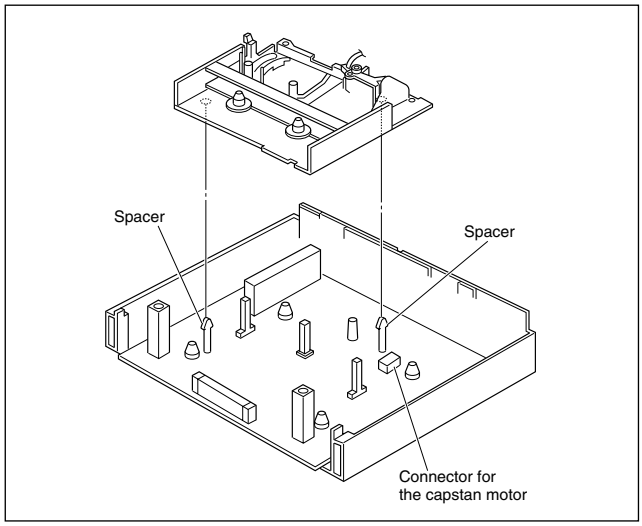


Fig. 2-2-8b

2. How to install (Centering the mounting position)

When the capstan motor has once been removed and then reinstalled out of the initial correct position in the rotational direction, the capstan motor current may be unstable during operation in high or low temperatures. This may result in greater Wow & Flutter and occasionally in power breakdown because of current over - load. Install the capstan motor while following the procedure given below.
(The capstan motor is centrally located when the unit is shipped from the factory.)

(1) Provisionally tighten the three screws (A) securing the capstan motor.
(2) Install the mechanism assembly to which the capstan motor is provisionally fastened on the bottom chassis which incorporates the Main board assembly. (No need to tighten the screws for mounting the mechanism.)
Make sure that all the connectors for the mechanism assembly and the Main board assembly are correctly installed as indicated in Fig. 2-2-8b.
(3) Making sure that the connector for the capstan motor is correctly mounted, and securely tighten the three screws (A).

Note:

- ***When the capstan motor has been replaced with a new one, perform recording in the EP(or LP) mode for at least 2 minutes at normal temperatures immediately before starting the FF/REW or SEARCH operations (Aging).***

2.2.9 Pole Base Assembly (supply or take-up side)

1. How to remove

(1) Remove the UV catcher 2 on the removal side by loosening the screw (A).
(2) Remove the pole base assembly on the supply side from the mechanism assembly by loosening the screw (B) on the mechanism assembly back side and sliding the pole base assembly toward the UV catcher 2.
(3) As for the pole base assembly on the take-up side, turn the pulley of the loading motor to lower the cassette holder because the screw (B) is hidden under the control plate. (See the “Procedures for Lowering the Cassette holder assembly” of 1.3 DISASSEMBLY/ASSEMBLY METHOD.) Further turn the motor pulley to move the cassette holder until the screw (B) is no longer under the control plate (in the half-loading position). Then remove it as done for the supply side by removing the screw (B).

Note:

- ***After reinstalling the Pole base assembly and the UV catcher2, be sure to perform compatibility adjustment.***

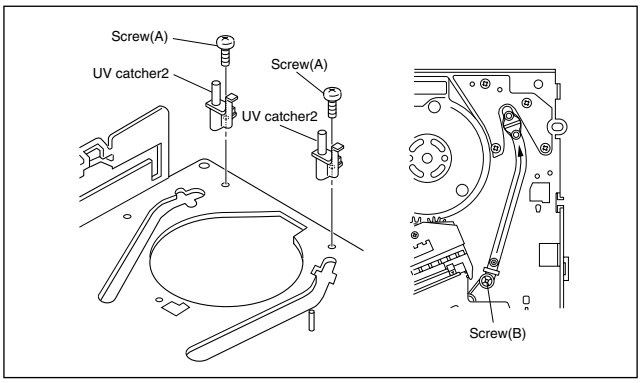


Fig. 2-2-9a

2.2.10 Rotary Encoder

1. How to remove

(1) Remove the screw (A) and remove the rotary encoder by pulling it up. (See Fig. 2-2-10a.)

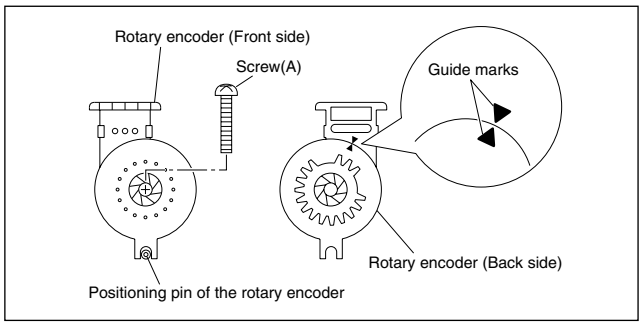


Fig. 2-2-10a

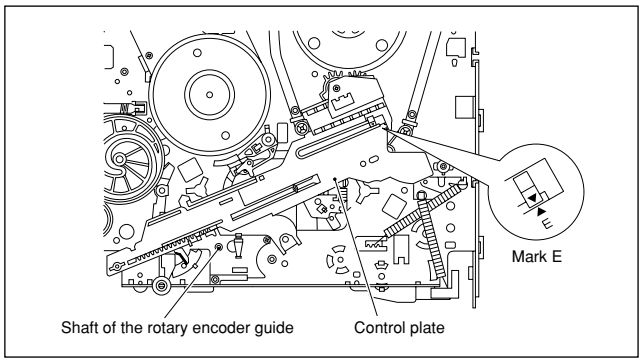


Fig. 2-2-10b

2. How to install (Phase matching)

(1) Make sure that the mark E of the control plate is in alignment with the mark ▼ of the loading arm gear shaft and bring the guide marks on the rotary encoder into alignment as indicated in Fig.2-2-10a. (See Fig. 2-2-10a and Fig. 2-2-10b.)

(2) Turn over the rotary encoder with its guide marks kept in alignment and install it by fitting on the shaft of the rotary encoder guide and the positioning pin.

(3) Tighten the screw (A) to complete the installation.

2.2.11 Clutch Unit

(1) Remove the belt wound around the capstan motor and the clutch unit.

(2) Remove the slit washer and remove the clutch unit.

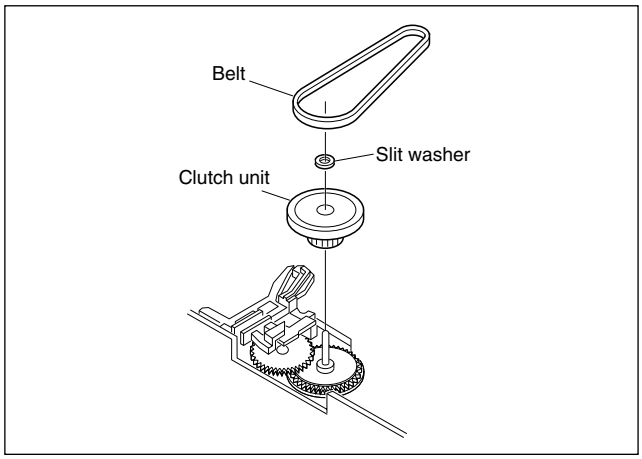


Fig. 2-2-11a

2.2.12 Change Lever Assembly, Direct Gear, Clutch Gear and Coupling Gear

1. How to remove

(1) Release the two lugs of the rotary encoder guide in the arrow-indicated direction and remove the change lever assembly.

(2) Remove the slit washer retaining the direct gear and remove the latter.
Take care so as not to lose the washer and spring. (See Fig.2-2-12a.)

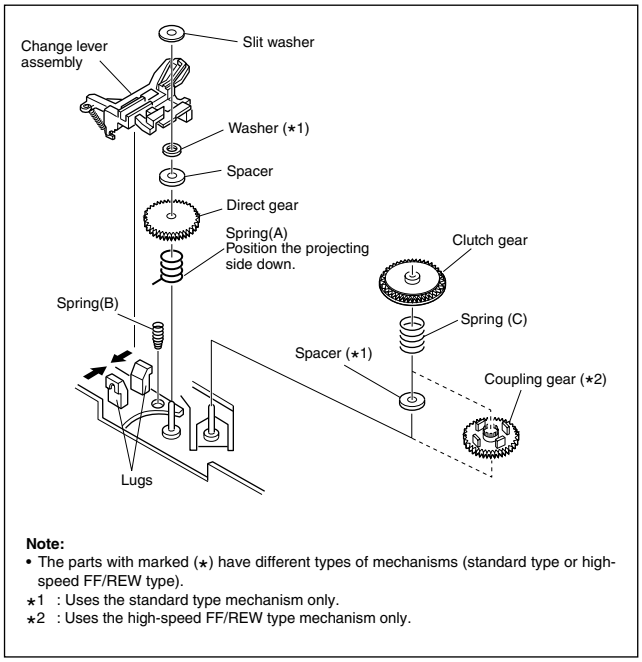


Fig. 2-2-12a

2. How to install

(1) Install the clutch gear, spring (A), spring (C), direct gear, spacer and others to the individual shafts of the main deck, and finally the slit washer. (See Fig.2-2-12a.)

(2) Let the spring (B) drops into the rotary encoder guide hole and install the change lever assembly.(Take care not to mistake a direction of the spring.) The point is to slightly lift the clutch gear and catch it from the both sides with the assembly. (See Fig.2-2-12b.)

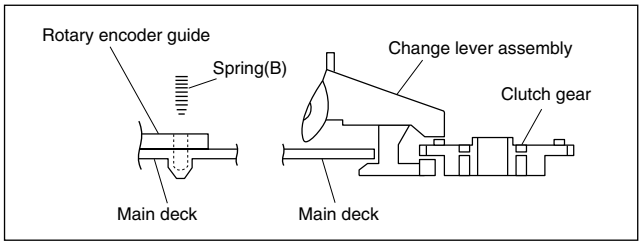


Fig. 2-2-12b

2.2.13 Link Lever

1. How to remove

(1) Remove the two slit washers.
(2) Remove the link lever by lifting it from the shaft retained by the slit washers. Then swing the link lever counterclockwise and remove it from the locking section of the control plate.

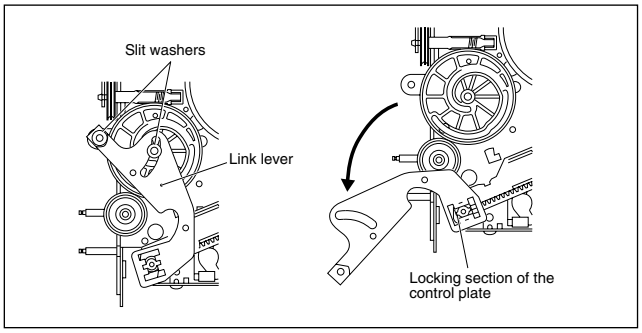


Fig. 2-2-13a

2. How to install (Phase matching)

(1) Slide the control plate so that its mark E is aligned with the mark ▼ on the loading arm gear shaft. (See Fig.2-2-13b.)
(2) Rotate the worm gear until the guide hole of the control cam is aligned exactly with the guide hole of the main deck. (See Fig.2-2-13c.)
(3) Insert the link lever into the locking section of the control plate. (See Fig.2-2-13a.)
(4) Rotate the link lever clockwise so that it is installed on the shafts in the center (centre) and on the left of the control cam.
(5) Fasten the slit washers at these two points.

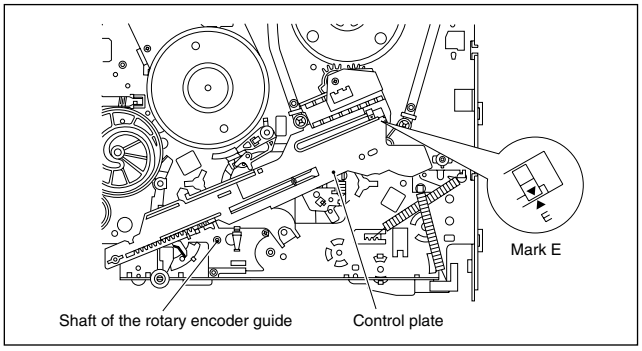


Fig. 2-2-13b

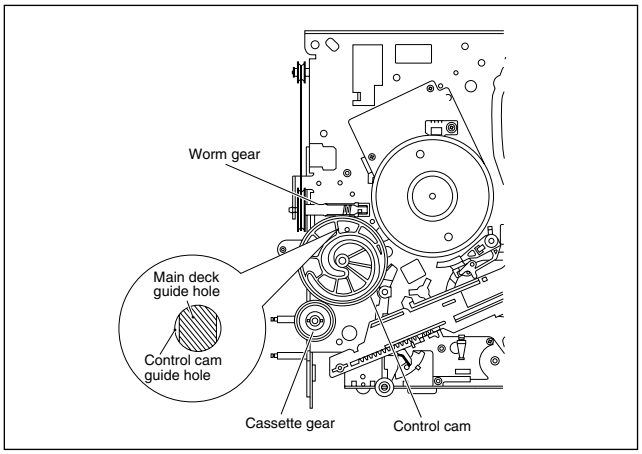


Fig. 2-2-13c

2.2.14 Cassette Gear, Control Cam and Worm Gear

1. How to remove

(1) Remove the control cam by lifting it.
(2) Open the two lugs of the cassette gear outward and pull the latter off.
(3) Remove the belt wound around the worm gear and the loading motor.
(4) Open the lug of the lid guide outward and remove the worm gear.

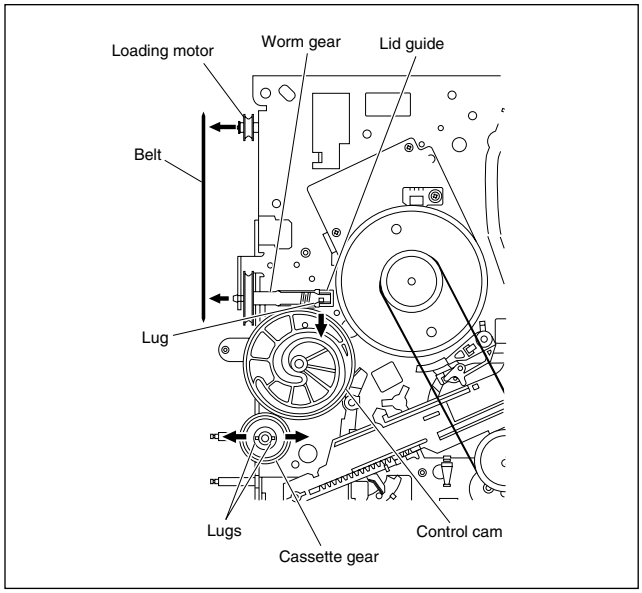


Fig. 2-2-14a

2.2.15 Control Plate

1. How to remove

(1) Remove the screw (A) retaining the control bracket 1 and remove the latter.
(2) Slide the control plate as indicated by the arrow and remove the control plate. (See Fig.2-2-15a.)

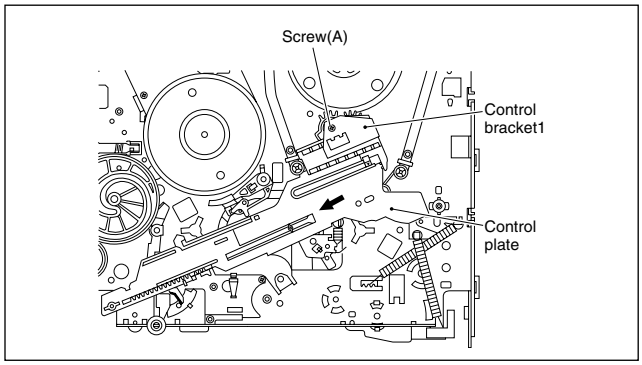


Fig. 2-2-15a

2. How to install (Phase matching)

(1) Adjust the position of the idler arm assembly pin as indicated in Fig.2-2-15b (to the left of center (centre) of the R section).
(2) Bring the guide hole of the take-up lever into alignment with the hole at the control plate guide and fix the position by inserting a 1.5 mm hexagonal wrench.

(3) Install the control plate so that the section A of the loading arm gear shaft fits into the hole (A) of the control plate, the section B of the control plate guide into the hole (B), and the control plate comes under the section C of the rotary encoder guide and the section D of the loading arm gear shaft while press-fit the pole base assmebly (supply side) as indicated by the arrow. It is important that the tension arm assembly shaft is positioned closer toward you than the control plate. (See Fig.2-2-15c.)
(4) Make sure that the mark E of the control plate is in alignment with the mark ▼ of the loading arm gear shaft. (See Fig.2-2-15c.)
(5) Pull off the hexagonal wrench for positioning.

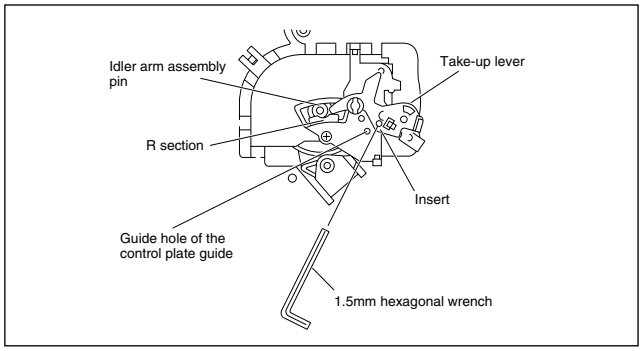


Fig. 2-2-15b

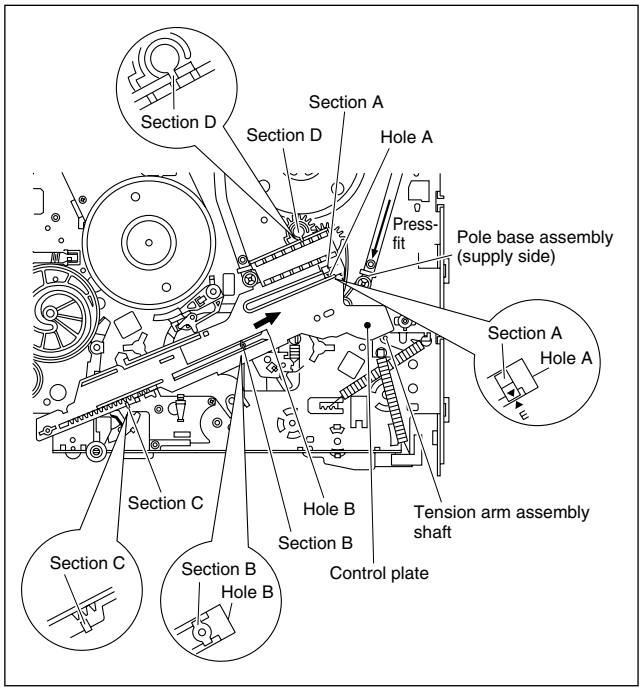


Fig. 2-2-15c

2.2.16 Loading Arm Gear (supply or take-up side) and Loading Arm Gear Shaft

1. How to remove

(1) Remove the loading arm gear (supply side) by loosening the screw (A). (See Fig. 2-2-16a.)
(2) Remove the screw (B) and remove the torsion arm from the pole base assembly (take-up side). (See Fig.2-2-16a.)
(3) Turn the loading arm gear (take-up side) clockwise so that the notch of the loading arm gear (take-up side) is in alignment with the projection of the loading arm gear shaft and lift it.
Likewise, turn the loading arm counterclockwise so that the notch is in alignment with the projection and remove the loading arm gear (take-up side). (See Fig.2-2-16a and Fig. 2-2-16b.)
(4) When removing the loading arm gear shaft, be sure of first removing the screw retaining the drum assembly (on the back side of the loading arm gear shaft). Then remove the screw (C) and remove the loading arm gear shaft by sliding it.

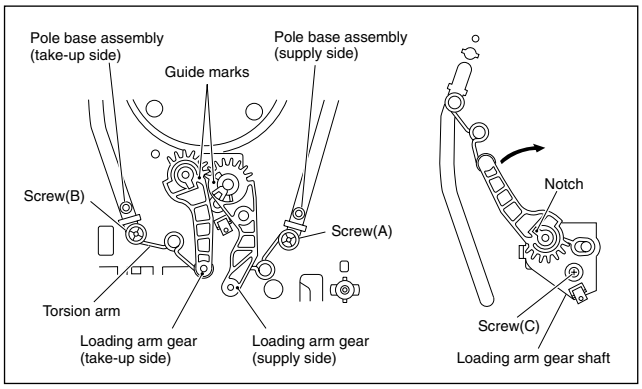


Fig. 2-2-16a

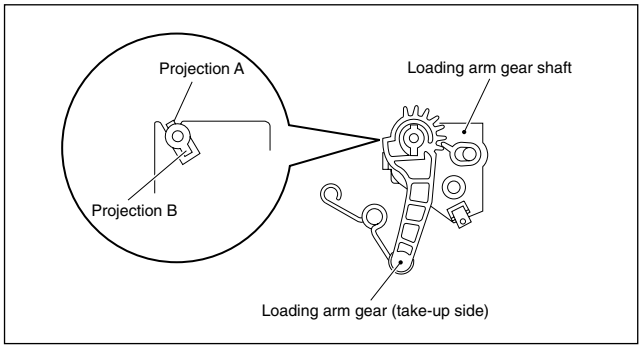


Fig. 2-2-16b

2. How to install

(1) Align the notch of the loading arm gear (take-up side) to the projection B of the loading arm gear shaft and slip it over. Then rotate it clockwise for alignment with the projection A and slip it down to the bottom. (See Fig.2-2-16b.)
(2) Then turn the loading arm gear (take-up side) counterclockwise. Hang the torsion arm on the pole base assembly (take-up side) and tighten the screw (B).
(3) Install the loading arm gear (supply side) so that the guide mark of the loading arm gear (take-up side) is in alignment with the guide mark of the loading arm gear (supply side). Then hang the torsion arm on the pole base assembly (supply side) and tighten the screw (A). (See Fig.2-2-16a.)

2.2.17 Take-up Lever, Take-up Head and Control Plate Guide

(1) Remove the spring of the take-up lever from the main deck.
(2) Remove the lug (A) of the take-up lever from the main deck and pull out the take-up lever and the take-up head together.
(3) Remove the screw (A).
(4) Align the idler arm assembly pin in the center (centre) of the R section of the control plate guide, remove the control plate guide lugs (B) and (C) from the main deck, and remove the control plate guide.

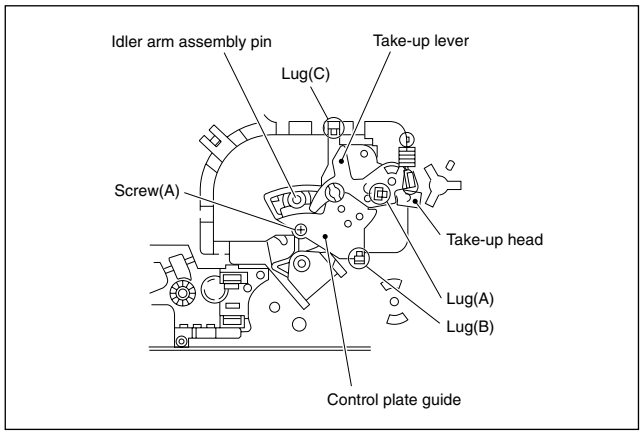


Fig. 2-2-17a

2.2.18 Capstan Brake Assembly

1. How to remove

(1) Move the lug (A) of the capstan brake assembly in the arrow-indicated direction so that it comes into alignment with the notch of the main deck. (See Fig. 2-2-18a.)
(2) Remove the lug (B) of the capstan brake assembly from the main deck and remove the capstan brake assembly.

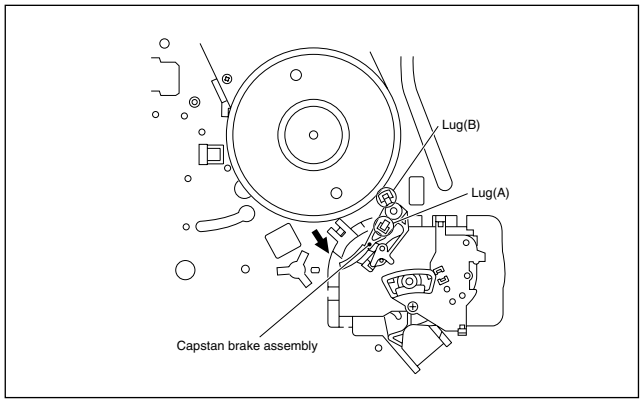


Fig. 2-2-18a

2.2.19 Sub Brake Assembly (take-up side)

1. How to remove

(1) Remove the spring attached to the lid guide and sub brake assembly (take-up side).
(2) Bring the lug (A) of the sub brake assembly (take-up side) into alignment with the notch of the main deck.
(3) Remove the lugs (B) and (C) of the sub brake assembly (take-up side) from the main deck and remove the sub brake assembly (take-up side).

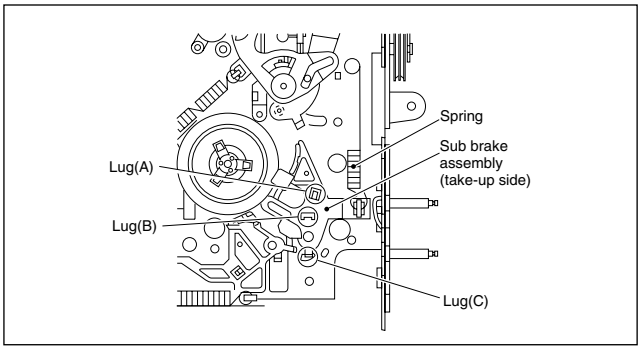


Fig. 2-2-19a

2.2.20 Main Brake Assembly (take-up side), Reel Disk (take-up side) and Main Brake Assembly (supply side)

1. How to remove

(1) Move the main brake assembly (take-up side) in the arrow-indicated direction and remove the reel disk (take-up side).
(2) Remove the spring attached to the main brake assembly.
(3) Remove the lug (A) of the main brake assembly (take-up side) and pull out the lug (B) after bringing it into alignment with the main deck notch.
(4) Remove the lugs (C), (D) and (E) of the main brake assembly (supply side) from the main deck and pull them off. (See Fig.2-2-20a.)
(5) When installing the main brake assembly (take-up side), slide the brake lever in the direction as indicated by the arrow to prevent it from hitting the projection of the main brake assembly (take-up side). (See Fig.2-2-20b.)

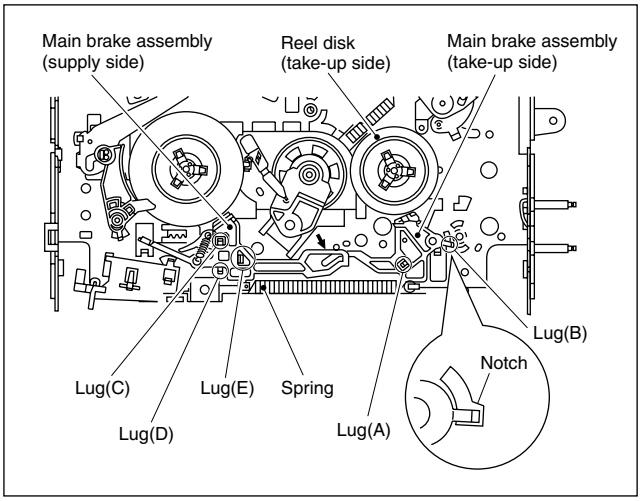
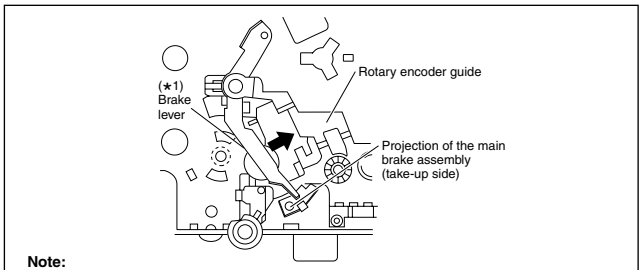


Fig. 2-2-20a



Note:
• The parts with marked (∗) have different types of mechanisms (standard type or high-speed FF/REW type).
∗1 : Uses the standard type mechanism only.

Fig. 2-2-20b

2.2.21 Tension Brake Assembly, Reel Disk (supply side) and Tension Arm Assembly

1. How to remove

(1) Remove the three lugs of the tension brake assembly from the main deck and pull them off.
(2) Remove the reel disk (supply side) by loosening in the arrow-indicated direction the main brake assembly (supply side).
(3) Remove the tension spring on the back of the main deck. Then release the lug of the tension arm bearing in the arrow-indicated direction and draw out the tension arm assembly. (See Fig. 2-2-21a.)

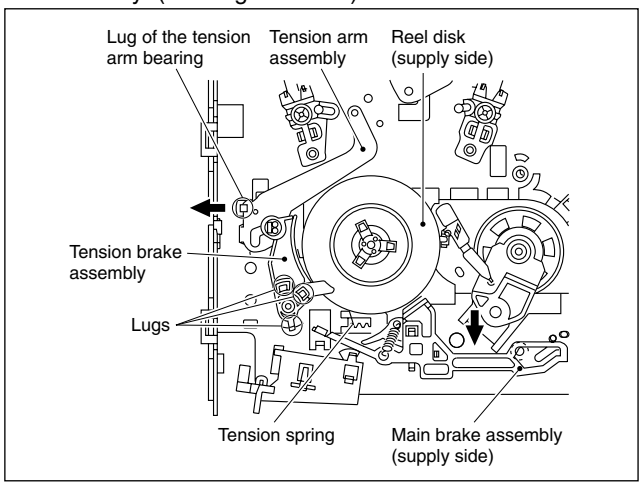


Fig. 2-2-21a

2.2.22 Idler Lever, Idler Arm Assembly

1. How to remove

(1) Remove the lug of the idler lever from the main deck and remove the hook fitted in the idler arm assembly hole by lifting it.
(2) Remove the slit washer and pull out the idler arm assembly.

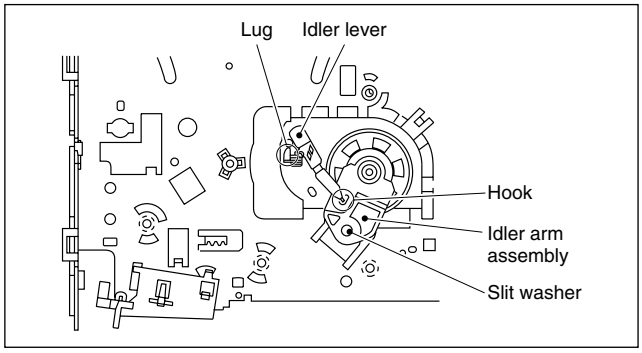


Fig. 2-2-22a

2.2.23 Stator Assembly

(1) Remove the flat cable.
(2) Remove the two screws (A).
(3) Remove the stator assembly by lifting in the arrow-indicated direction. (Take care that the brush spring does not jump out.)
(4) After installation, be sure to perform the PB switching point adjustment according to the electrical adjustment procedure.

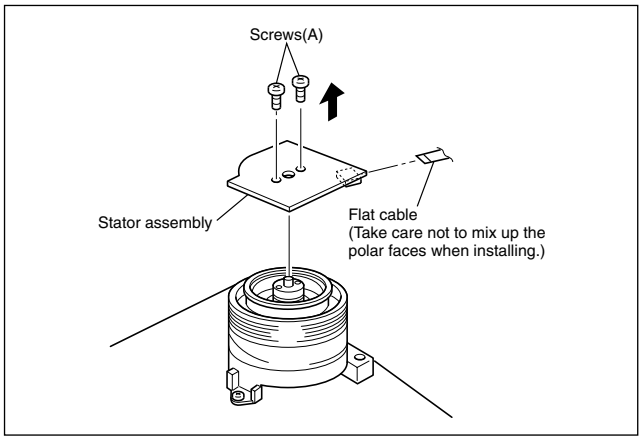


Fig. 2-2-23a

2.2.24 Rotor Assembly

(1) Remove the stator assembly.
(2) Remove the two screws (B) and remove the rotor assembly.

Note:

- ***When installing the rotor assembly, note that a normal picture cannot be obtained without ensuring the phase matching as mentioned below.***

(3) Match the phases of the upper drum assembly and the rotor assembly as indicated in Fig.2-2-24a.
(4) Place the upper drum assembly hole (a) over the rotor assembly holes (b) (with three holes to be aligned) and tighten the two screws (B). (See Fig.2-2-24a.)

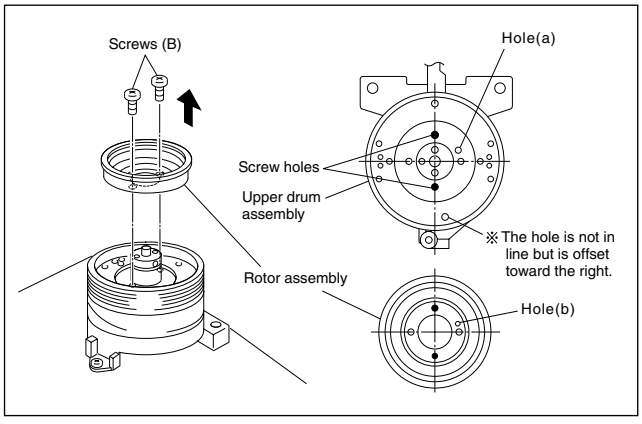


Fig. 2-2-24a

2.2.25 Upper Drum Assembly

1. How to remove

(1) Remove the stator assembly and rotor assembly.
(2) Loosen the screw of the collar assembly using a 1.5 mm hexagonal wrench and remove the collar assembly. Also remove the brush, spring and cap at one time.
(3) Remove the upper drum assembly and remove the washer using tweezers.

Note:

- ***When replacement is required, control the up- down movement of the brush. Never apply grease.***

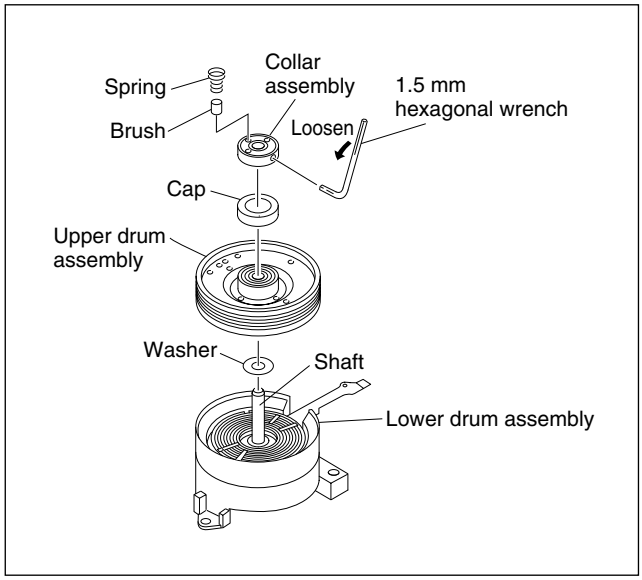


Fig. 2-2-25a

2. How to install

(1) Clean the coil parts of the lower drum assembly and the newly installed upper drum assembly with an air brush in advance. (See Fig.2-2-25b.)
(2) Install a new washer and upper drum assembly on the drum shaft. (See Fig.2-2-25a.)

Note:

- ***When replacing the upper drum assembly, replace it the together with the washer.***

(3) Install the cap to the upper drum assembly.
(4) Position the collar assembly as indicated in Fig.2-2-25c while controlling its up- down movement.
(5) Secure the collar assembly in position with a hexagonal wrench while pressing its top with the fingers.
(6) After installation, gently turn the upper drum assembly with your hand to make sure that it turns normally. Then install the brush and the spring.
(7) Install the rotor assembly and stator assembly according to Fig 2-2-23a and 2-2-24a.
(8) When installation is complete, clean the upper drum assembly and lower drum assembly and carry out the following adjustments.
    - PB switching point adjustment
    - Slow tracking adjustment
    - Compatibility adjustment (Be sure to check for compatibility for the EP (or LP) mode.)

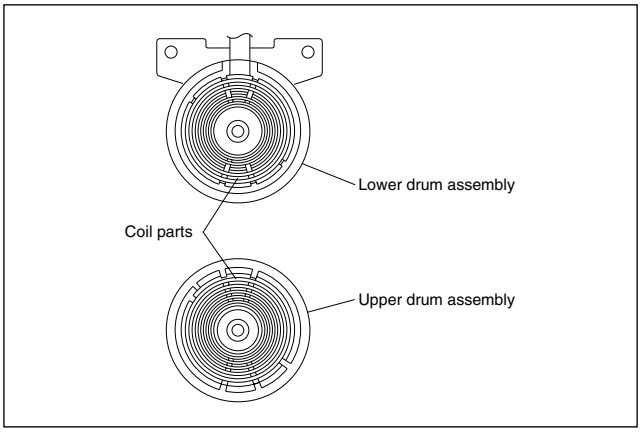


Fig. 2-2-25b

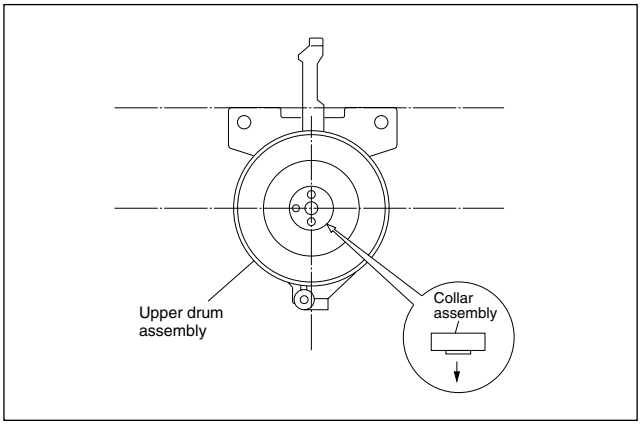


Fig. 2-2-25c

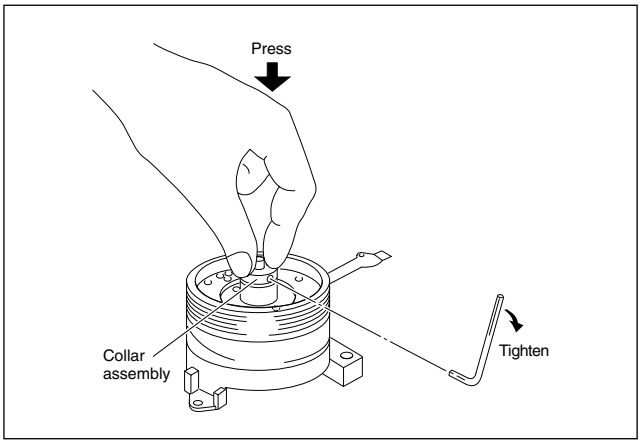


Fig. 2-2-25d

2.3 COMPATIBILITY ADJUSTMENT

Notes:

- ***Although compatibility adjustment is very important, it is not necessary to perform this as part of the normal servicing work. It will be required when you have replaced the audio control head, drum assembly or any part of the tape transport system.***
- ***To avoid any damage to the alignment tape while performing the compatibility adjustment, get a separate cassette tape (for recording and play back) ready to be used for checking the initial tape running behavior.***
- ***Unless otherwise specified, all measuring points and adjustment parts are located on the Main board.***
- ***When using the Jig RCU, set its custom code to match the custom code of the VCR.***

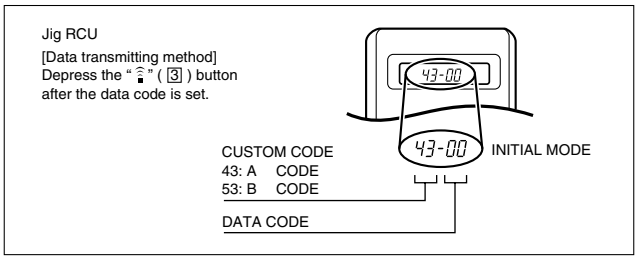


Fig. 2-3a Jig RCU [PTU94023B]

2.3.1 Checking/Adjustment of FM Waveform Linearity

Signal	(A1) (A2)	• Alignment tape(SP, stairstep, PAL) [MHPE] • Alignment tape(LP, stairstep, PAL) [MHPE-L]
Mode	(B)	• PB
Equipment	(C)	• Oscilloscope
Measuring point	(D)	• TP106 (PB. FM)
External trigger	(E)	• TP111 (D.FF)
Adjustment part	(F)	• Guide roller [Mechanism assembly]
Specified value	(G)	• Flat V.PB FM waveform
Adjustment tool	(H)	• Roller driver [PTU94002]

(1) Play back the alignment tape (A1).
(2) Apply the external trigger signal to D.FF (E), to observe the V.PB FM waveform at the measuring point (D).
(3) Press the channel buttons (+, –) simultaneously to enter the manual tracking mode. This also brings tracking to the center (centre).
(4) Make sure that there is no significant level drop of the V.PB FM waveform caused by the tracking operation, with its generally parallel and linear variation ensured. Perform the following adjustments when required. (See Fig. 2-3-1a.)
(5) Reduce the V.PB FM waveform while pressing the channel buttons (+, –) during playback. If a drop in level is found on the left side, turn the guide roller of the pole base assembly (supply side) with the roller driver to make the V.PB FM waveform linear.
If a drop in level is on the right side, likewise turn the guide roller of the pole base assembly (take-up side) with the roller driver to make it linear. (See Fig. 2-3-1c.)
(6) Make sure that the V.PB FM waveform varies in parallel and linearly with the tracking operation again. When required, perform fine-adjustment of the guide roller of the pole base assembly (supply or take-up side).
(7) Unload the cassette tape once, play back the alignment tape (A1) again and confirm the V.PB FM waveform.
(8) After adjustment, confirm that the tape wrinkling does not occur at the roller upper or lower limits. (See Fig. 2-3-1d.)

[Perform adjustment step (9) only for the models equipped with SP mode and EP (or LP) mode.]

(9) Repeat steps (1) to (8) by using the alignment tape (A2).

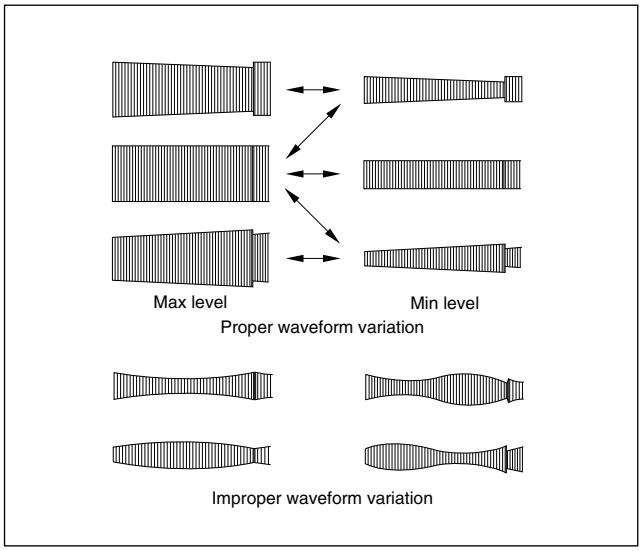


Fig. 2-3-1a

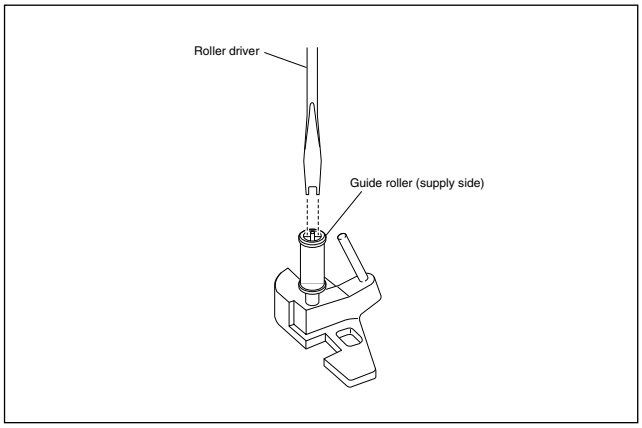


Fig. 2-3-1b

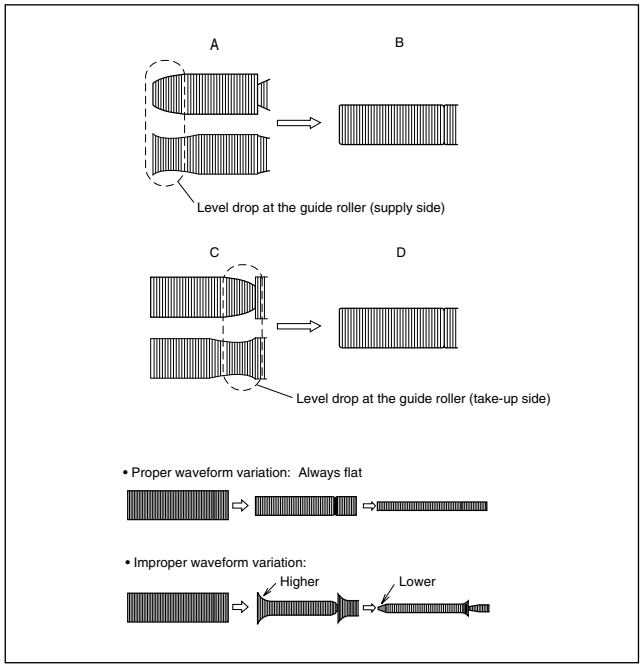


Fig. 2-3-1c

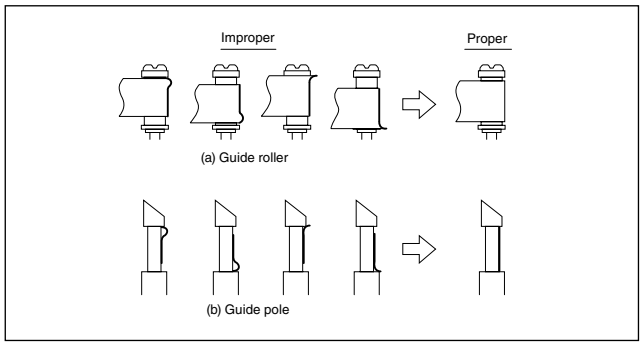


Fig. 2-3-1d

2.3.2 Checking/Adjustment of the Height and Tilt of the Audio Control Head

Note:

- ***Set a temporary level of the height of the A/C head in advance to make the adjustment easier after the A/C head has been replaced. (See Fig.2-2-6c.)***

Signal	(A)	• Alignment tape(SP, stairstep, PAL) [MHPE]
Mode	(B)	• PB
Equipment	(C)	• Oscilloscope
Measuring point	(D1) (D2)	• AUDIO OUT terminal • TP4001 (CTL. P)
External trigger	(E)	• TP111 (D.FF)
Adjustment part	(F)	• A/C head [Mechanism assembly]
Specified value	(G)	• Maximum waveform

(1) Play back the alignment tape (A).
(2) Apply the external trigger signal to D.FF (E), to observe the AUDIO OUT waveform and Control pulse waveform at the measuring points (D1) and (D2) in the ALT mode.
(3) Press the channel buttons (+, –) simultaneously to enter the manual tracking mode. This also brings tracking to the center (centre).
(4) Adjust the AUDIO OUT waveform and Control pulse waveform by turning the screws (1), (2) and (3) little by little until both waveforms reach maximum. The screw (1) and (3) are for adjustment of tilt and the screw (2) for azimuth.

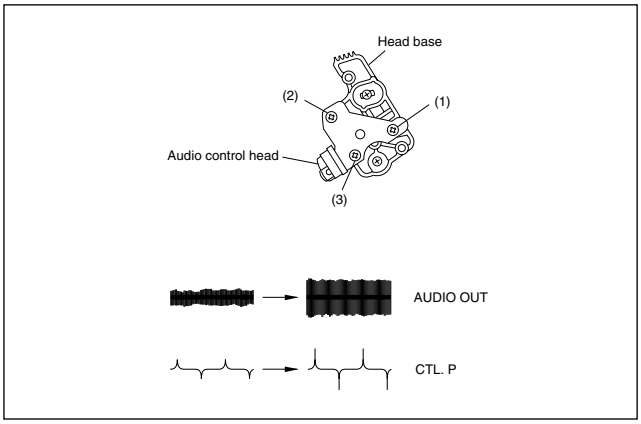


Fig. 2-3-2a

2.3.3 Checking/Adjustment of the Audio Control Head Phase (X-Value)

Signal	(A1)	• Alignment tape(SP, stairstep, PAL) [MHPE]
Mode	(B)	• PB
Equipment	(C)	• Oscilloscope
Measuring point	(D)	• TP106 (PB. FM)
External trigger	(E)	• TP111 (D.FF)
Adjustment part	(F)	• A/C head base [Mechanism assembly]
Specified value	(G)	• Maximum V.PB FM waveform
Adjustment tool	(H)	• A/C head positioning tool [PTU94010]

(1) Play back the alignment tape (A1).
(2) Apply the external trigger signal to D.FF (E), to observe the V.PB FM waveform at the measuring point (D).
(3) Press the channel buttons (+, –) simultaneously to enter the manual tracking mode. This also brings tracking to the center (centre).
(4) Loosen the screws (4) and (5), then set the A/C head positioning tool to the innermost projected part of the A/C head. (See Fig. 2-3-3a.)
(5) Turn the A/C head positioning tool fully toward the capstan. Then turn it back gradually toward the drum and stop on the second peak point position of the V.PB FM waveform output level. Then tighten the screws (4) and (5).
(6) Perform the tracking operation and make sure that the V.PB FM waveform is at its maximum.
If it is not at maximum, loosen the screws (4) and (5), and turn the A/C head positioning tool to bring the A/C head to a position, around where the waveform reaches its maximum for the first time. Then tighten the screws (4) and (5).

[Perform adjustment steps (7) to (10) only for 2 Head models equipped with LP mode.]

(7) Then play back the alignment tape (A2).
(8) Press the channel buttons (+, –) simultaneously to enter the manual tracking mode. This also brings tracking to the center (centre).
(9) Perform the tracking operation and make sure that the V.PB FM waveform is at its maximum.
(10) If it is not at maximum, loosen the screws (4) and (5), and turn the A/C head positioning tool to bring the A/C head to a position, around where the waveform reaches its maximum for the first time. Then tighten the screws (4) and (5).

Note:

- ***After adjusting, always perform the confirmation and re-adjustment of the item 2.3.4.***

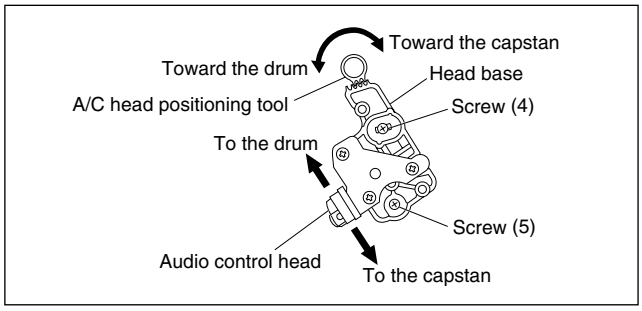


Fig. 2-3-3a

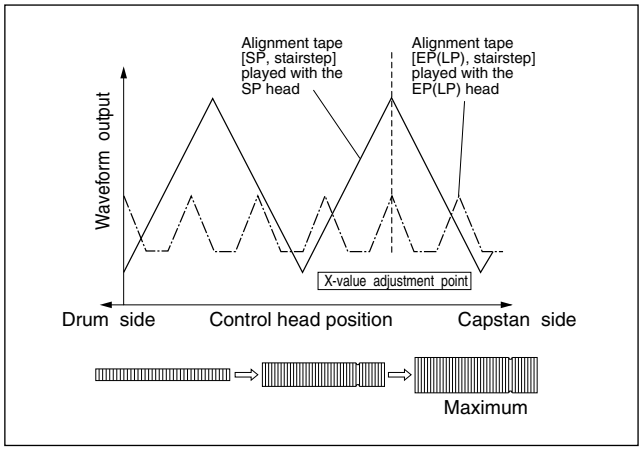


Fig. 2-3-3b

2.3.4 Checking/Adjustment of the Standard Tracking Preset

Signal	(A)	• Alignment tape(LP, stairstep, PAL) [MHPE-L]
Mode	(B)	• PB → Auto adjust
Equipment	(C)	• Oscilloscope
Measuring point	(D)	• TP106 (PB. FM)
External trigger	(E)	• TP111 (D.FF)
Adjustment part	(F)	• Jig RCU: Code “50”
Specified value	(G)	• STOP mode (Maximum V.PB FM waveform)
Adjustment tool	(H)	• Jig RCU [PTU94023B]

(1) Play back the alignment tape (A).
(2) Apply the external trigger signal to D.FF (E), to observe the V.PB FM waveform at the measuring point (D).
(3) Confirm that the automatic tracking operation is completed.
(4) Set the VCR to the Auto adjust mode by transmitting the code (F) twice from the Jig RCU. When the VCR enters the stop mode, the adjustment is completed.
(5) If the VCR enters the eject mode, perform adjustment for the audio control head phase (X-value) again.

2.3.5 Checking/Adjustment of the Tension Pole Position

Signal	(A)	• Back tension cassette gauge [PUJ48076-2]
Mode	(B)	• PB
Adjustment part	(F)	• Adjust pin [Mechansim assembly]
Specified value	(G)	• 25 - 51 gf•cm (2.45 – 5 × 10^{-3} Nm]

(1) Play back the back tension cassette gauge (A).
(2) Check that the indicated value on the left side gauge is within the specified value (G).
(3) If the indicated value is not within the specified value (G), perform the adjustment in a following procedure.
  1) Set the VCR to the mechanism service mode. (See 1.5 MECHANISM SERVICE MODE.)
  2) Set the VCR to the play back mode and adjust by turning adjustment pin to align the tension arm assembly edge with the main deck hole (A) on the right edge marker. (See Fig. 2-3-5a)

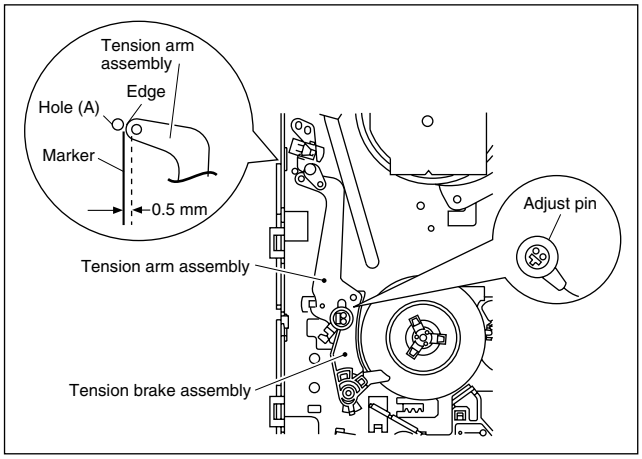
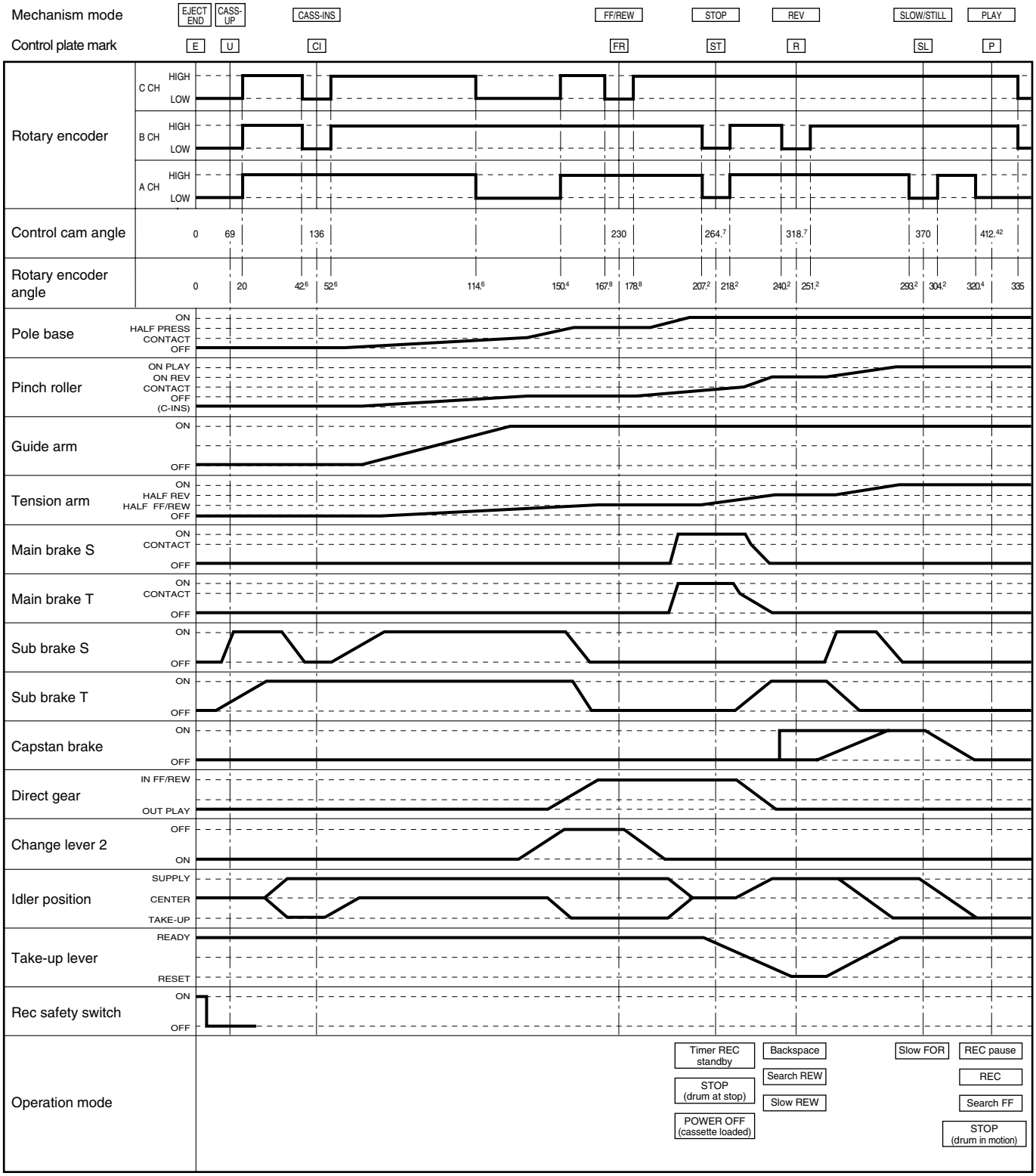


Fig. 2-3-5a

Mechanism Timing Chart



SECTION 3
ELECTRICAL ADJUSTMENT

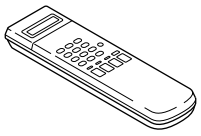
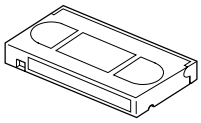
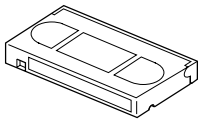
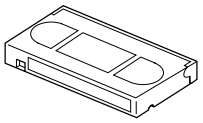
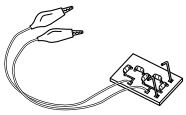
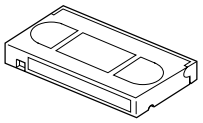
3.1 PRECAUTION

The following adjustment procedures are not only necessary after replacement of consumable mechanical parts or board assemblies, but are also provided as references to be referred to when servicing the electrical circuitry.
In case of trouble with the electrical circuitry, always begin a service by identifying the defective points by using the measuring instruments as described in the following electrical adjustment procedures. After this, proceed to the repair, replacement and/or adjustment. If the required measuring instruments are not available in the field, do not change the adjustment parts (variable resistor, etc.) carelessly.

3.1.1 Required test equipments

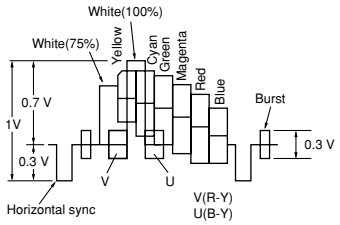
- Color (colour) television or monitor
- Oscilloscope: wide-band, dual-trace, triggered delayed sweep
- Frequency counter
- Signal generator: RF / IF sweep / marker
- Signal generator: stairstep, color (colour) bar [PAL]
- Recording tape
- Digit-key remote controller(provided)

3.1.2 Required adjustment tools

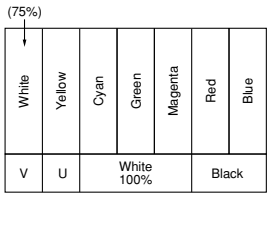
Jig RCU PTU94023B	Alignment tape (SP, stairstep, PAL) MHPE	Alignment tape (LP, stairstep, PAL) MHPE-L
		
Alignment tape (SP stairstep, NTSC) MHP	**LPF PTU93006**	**Alignment tape (S-VHS, SP/LP, color (colour) bar) MH-2H**
		

3.1.3 Color (colour) bar signal,Color (colour) bar pattern

● **Colour bar signal [PAL]**



● **Colour bar pattern [PAL]**



3.1.4 Switch settings and standard precautions

The SW settings of the VCR and the standard precautions for the electrical adjustments are as follows.

- ***When using the Jig RCU, set its custom code to match the custom code of the VCR.***

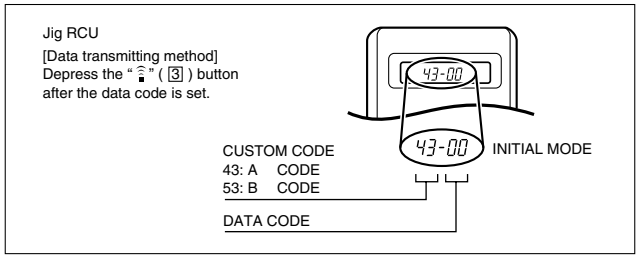


Fig. 3-1-4a Jig RCU [PTU94023B]

- ***Set the switches as shown below unless otherwise specified on the relevant adjustment chart. The switches that are not listed below can be set as desired.***
  If the VCR is not equipped with the functions detailed below, setup is not required.

AUTO PICTURE/VIDEO CALIBRATION/ B.E.S.T./D.S.P.C.	OFF
PICTURE CONTROL/SMART PICTURE	NORMAL/NATURAL
VIDEO STABILIZER	OFF
TBC	ON
Digital 3R	ON
VIDEO NAVIGATION/TAPE MANAGER	OFF

- ***Unless otherwise specified, all measuring points and adjustment parts are located on the Main board.***
- ***In the Signal column of the adjustment chart, "Ext. S-input" means the Y/C separated video signal and "Ext. input" means the composite video signal input.***

3.1.5 EVR Adjustment

Some of the electrical adjustments require the adjustment performed by the EVR system. The Main board assembly have EEPROMs for storing the EVR adjustment data and user setups.

Notes:

- ***In the EVR adjustment mode, the value is varied with the channel buttons (+, –). The adjusted data is stored when the setting mode changes (from PB to STOP, when the tape speed is changed, etc.). Take care to identify the current mode of each adjustment item when making an adjustment.***
- ***When changing the address setting in the EVR adjustment mode, use the Jig RCU or the remote controller having numeric keypad with which a numeric code can be directly input.***
  The remote control code of the Jig RCU corresponds to each of the digit keys on the remote controller as follows.

Digit-key	0	1	2	3	4	5	6	7	8	9
Code	20	21	22	23	24	25	26	27	28	29

- ***As the counter indication and remaining tape indication are not displayed FDP during the EVR adjustment mode, check them on the TV monitor screen.***
- ***When performing the EVR adjustment, confirm that the FDP indication is changed to the EVR mode, as shown below.***

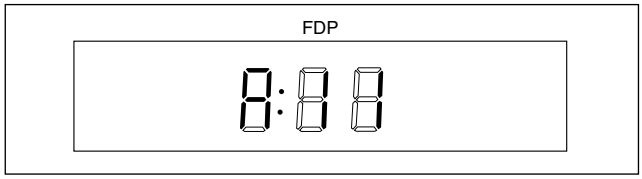


Fig. 3-1-5a EVR mode

3.2 SERVO CIRCUIT

3.2.1 Switching point

Signal	(A1) (A2) (A3)	• Stairstep signal • Alignment tape(SP, stairstep, PAL) [MHPE] • Alignment tape(SP, stairstep, NTSC) [MHP]
Mode	(B)	• PB • TBC: OFF
Equipment	(C)	• Oscilloscope
Measuring point	(D1) (D2)	• VIDEO OUT terminal (75Ω terminated) • TP106 (PB. FM)
External trigger	(E)	• TP111 (D.FF)/slope : –
Adjustment part	(F)	• Jig RCU: Code “51” or “52”
Specified value	(G)	• 8.0 ± 0.5H [MHPE] • 7.5 ± 0.5H [MHP]
Adjustment tool	(H)	• Jig RCU [PTU94023B]

(1) Play back the signal (A1) of the alignment tape (A2).
(2) Apply the external trigger signal to D.FF (E) to observe the VIDEO OUT waveform and V.PB FM waveform at the measuring points (D1) and (D2).
(3) Press the channel buttons (+, –) simultaneously to enter the manual tracking mode. This also brings tracking to the center (centre).
(4) Adjust tracking by pressing the channel buttons (+, –) so that the V.PB FM waveform becomes maximum.
(5) Transmit the code (F) from the Jig RCU to adjust so that the trigger point of the VIDEO OUT waveform is changed from the trailing edge of the V.sync signal becomes the specified value (G).
(6) Set the VCR to the stop mode or eject mode.
(7) Play back the signal (A1) of the alignment tape (A3).
(8) Repeat steps (2) to (6).

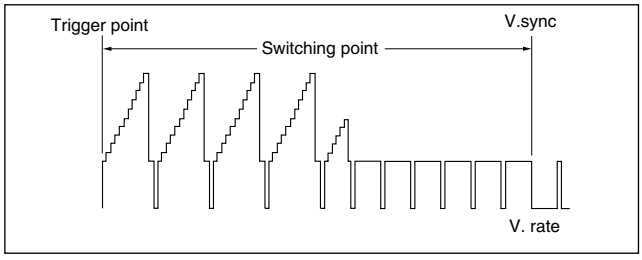


Fig. 3-2-1a Switching point

3.2.2 Slow tracking preset

Signal	(A1) (A2)	• Ext. input • Color (colour) bar signal [PAL]
Mode	(B1) (B2)	• S-VHS SP • S-VHS LP
Measuring point	(D)	• TV-Monitor
Adjustment part	(F)	• Jig RCU: Code “71“ or “72”
Specified value	(G)	• Minimum noise
Adjustment tool	(H)	• Jig RCU [PTU94023B]

(1) Record the signal (A2) in the mode (B1), and play back the recorded signal.
(2) Press the channel buttons (+, –) simultaneously to enter the manual tracking mode. This also brings tracking to the center (centre).
(3) Set the VCR to the FWD slow (+1/6×) mode.
(4) Transmit the code (F) from the Jig RCU to adjust so that the noise bar becomes the specified value (G) on the TV monitor in the slow mode.
(5) Set the VCR to the Stop mode.
(6) Confirm that the noise bar is (G) on the TV monitor in the slow mode.
(7) Repeat steps (3) to (6) in the REV slow (–1/6×) mode.
(8) Repeat steps (1) to (7) in the mode (B2).

Note:

- ***For FWD slow (+1/6×) playback, transmit the code “08” from the Jig RCU to enter the slow playback mode, and transmit the code “D0” for REV slow (–1/6×) mode.***

3.2.3 Dynamic Drum preset

Signal	(A1) (A2) (A3)	• Alignment tape(LP, stairstep, PAL) [MHPE-L] • Ext. input • Stairstep signal
Mode	(B1) (B2) (B3)	• LP 2× (FWD) search • LP • LP 1/6× (FWD) slow
Equipment	(C)	• Oscilloscope
Measuring point	(D)	• TP106 (PB. FM)
External trigger	(E)	• TP111 (D.FF)/slope : +
Adjustment part	(F)	• Jig RCU: Code “A0” or “A1”
Specified value	(G)	• Flat V.PB FM waveform
Adjustment tool	(H)	• Jig RCU [PTU94023B] • Digit-key remote controller

(1) Play back the signal (A3) of the alignment tape (A1).
(2) Apply the external trigger signal to D.FF (E) to observe the V.PB FM waveform at the measuring point (D).
(3) Press the channel buttons (+, –) simultaneously to enter the manual tracking mode. This also brings tracking to the center (centre).
(4) Adjust tracking by pressing the channel buttons (+, –) so that the V.PB FM waveform becomes maximum.
(5) Set the VCR to the mode (B1).
(6) Adjust tracking by pressing the channel buttons (+, –) so that the V.PB FM waveform becomes half of the maximum value.
(7) Transmit the code (F) from the Jig RCU to adjust so that the V.PB FM waveform becomes the specified value (G).
(8) Set the VCR to the PB mode once, set the VCR to the mode (B1) again and confirm that the V.PB FM waveform is the specified value (G). If the specified value (G) is not obtained, repeat step (7).
(9) Record the signal (A3) in the mode (B2), and play back the recorded signal.
(10) Repeat steps (3) to (8), for perform step (5) in the mode (B3).

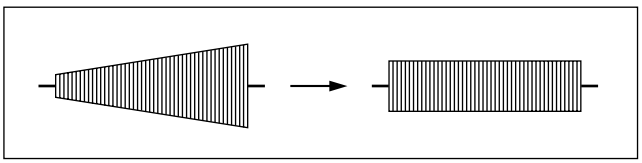


Fig. 3-2-3a DD preset

3.3 VIDEO CIRCUIT

3.3.1 D/A level

Signal	(A1) (A2) (A3)	• Ext. S-input / Ext. input • Color (colour) bar signal [PAL] • S-VHS tape
Mode	(B)	• S-VHS • EE
Equipment	(C)	• Oscilloscope
Measuring point	(D)	• Y OUT terminal (75Ω terminated)
Adjustment part	(F)	• VR1401 (D/A LEVEL ADJ) [3D DIGITAL/2M board]
Specified value (Note)	(G)	• 1.00 ± 0.015 Vp-p (reference value)

(1) Insert the cassette tape (A3) to enter the mode (B).
(2) Observe the Y OUT waveform at the measuring point (D).
(3) Check the Y level value when the External S-input (Y/C separated video signal).
(4) Switch the input signal to the External input (composite video signal), and adjust the adjustment part (F) so that the Y level becomes the same value observed in step (3).

Note:

- ***The specified value (G) is just a reference value to be obtained when the External S-Video (Y/C separated video) signal is input. In actual adjustment, set it to the value observed in step (3).***

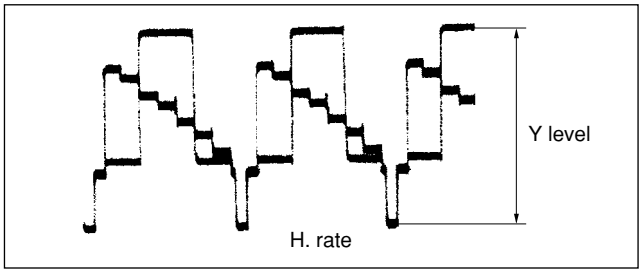


Fig. 3-3-1a D/A level

3.3.2 EE Y level

Signal	(A1) (A2)	• Ext. input • Color (colour) bar signal [PAL]
Mode	(B)	• EE
Equipment	(C)	• Oscilloscope
Measuring point	(D)	• Y OUT terminal (75Ω terminated)
EVR mode EVR address	(F1) (F2)	• Jig RCU: Code “57” • A:11 (Press remote controller “1” key twice)
Specified value	(G)	• 1.00 ± 0.03 Vp-p
Adjustment tool	(H)	• Jig RCU [PTU94023B] • Digit-key remote controller

(1) Observe the Y OUT waveform at the measuring point (D).
(2) Set the VCR to the EVR mode by transmitting the code (F1) from the Jig RCU.
(3) Set the EVR address to (F2) by pressing the button of the digit-key remote controller.
(4) Adjust with the channel buttons (+, –) on the VCR (or on the remote controller) so that the Y level of the Y OUT waveform becomes the specified value (G).
(5) Release the EVR mode of the VCR by transmitting the code (F1) from the Jig RCU again. (When the EVR mode is released, the adjusted data is memorized.)

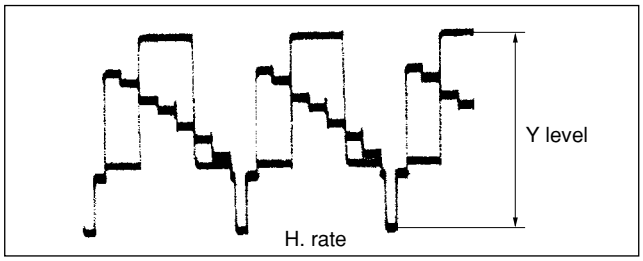


Fig. 3-3-2a EE Y level

3.3.3 PB Y level (S-VHS / VHS)

Signal	(A1) (A2)	• Ext. input • Color (colour) bar signal [PAL]
Mode	(B1) (B2)	• S-VHS SP • VHS SP
Equipment	(C)	• Oscilloscope
Measuring point	(D)	• Y OUT terminal (75Ω terminated)
EVR mode EVR address	(F1) (F2)	• Jig RCU: Code “57” • A:11 (Press remote controller “1” key twice)
Specified value	(G)	• 1.00 ± 0.03 Vp-p
Adjustment tool	(H)	• Jig RCU [PTU94023B] • Digit-key remote controller

(1) Observe the Y OUT waveform at the measuring point (D).
(2) Record the signal (A2) in the mode (B1), and play back the recorded signal.
(3) Press the channel buttons (+, –) simultaneously to enter the manual tracking mode. This also brings tracking to the center (centre).
(4) Set the VCR to the EVR mode by transmitting the code (F1) from the Jig RCU.
(5) Set the EVR address to (F2) by pressing the button of the digit-key remote controller.
(6) Adjust with the channel buttons (+, –) on the VCR (or on the remote controller) so that the Y level of the Y OUT waveform becomes the specified value (G).
(7) Release the EVR mode of the VCR by transmitting the code (F1) from the Jig RCU again. (When the EVR mode is released, the adjusted data is memorized.)
(8) Repeat steps (2) to (7) in the mode (B2).

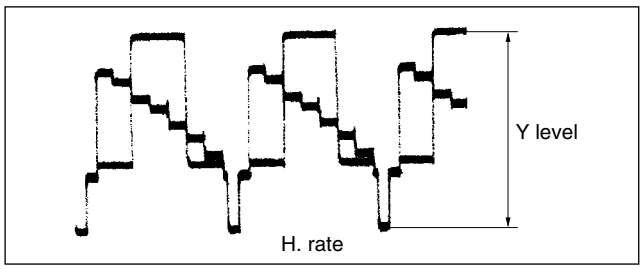


Fig. 3-3-3a PB Y level

3.3.4 REC color (colour) level

Signal	(A1)	• Alignment tape(S-VHS, SP/LP, Color(colour) bar) [MH-2H]
	(A2)	• Ext. input
	(A3)	• Color (colour) bar signal [PAL]
Mode	(B1)	• S-VHS SP
	(B2)	• S-VHS LP
Equipment	(C)	• Oscilloscope
Measuring point	(D1)	• TP106 (PB. FM)
	(D2)	• PB color (colour) output of the LPF
External trigger	(E)	• TP111 (D.FF)
EVR mode EVR address	(F1) (F2)	• Jig RCU: Code “57” • A:02 (Press remote controller “0” and “2” keys)
Specified value	(G)	• SP: “B” x 125 ± 5% • LP: “B” x 125 ± 5%
Adjustment tool	(H1)	• Jig RCU [PTU94023B]
	(H2)	• Digit-key remote controller
	(H3)	• LPF [PTU93006] (See Fig. 3-3-4a.)

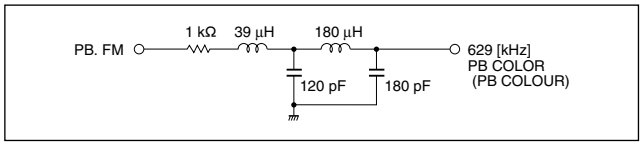


Fig. 3-3-4a LPF

(1) Connect the adjustment tool (H3) to the measuring point (D1).
(2) Apply the external trigger signal to D.FF (E) to observe the PB color (colour) waveform at the measuring point (D2).
(3) Play back the signal (A3) in the mode (B1) of the alignment tape (A1).
(4) Press the channel buttons (+, –) simultaneously to enter the manual tracking mode. This also brings tracking to the center (centre).
(5) Adjust tracking by pressing the channel buttons (+, –) so that the PB color (colour) waveform becomes maximum. Make a note of the higher PB color (colour) level as “B” at this time.
(6) Record the signal (A3) in the mode (B1), and play back the recorded signal.
(7) Set the VCR to the EVR mode by transmitting the code (F1) from the Jig RCU.
(8) Set the EVR address to (F2) by pressing the button of the digit-key remote controller.
(9) Adjust with the channel buttons (+, –) on the VCR (or on the remote controller) so that the higher level channel becomes the specified value (G) of the note "B" level as shown in Fig. 3-3-4b. (Adjust before recording, then confirm it by playing back.)
(10) After adjustment, record the signal (A3) then playing it back again. At this time, confirm that there is no inverting phenomenon or noise appearing on the playback screen.
(11) Release the EVR mode of the VCR by transmitting the code (F1) from the Jig RCU again. (When the EVR mode is released, the adjusted data is memorized.)
(12) Repeat steps (3) to (11) in the mode (B2).

Note:

- ***After adjusting, always perform the confirmation and re-adjustment of the item 3.4.1.***

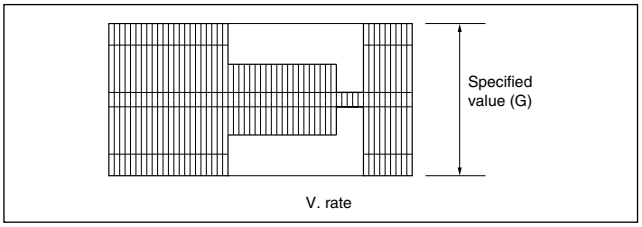


Fig. 3-3-4b REC color (colour) level

3.3.5 Video EQ (Frequency response)

Signal	(A1)	• Ext. S-input
	(A2)	• Video sweep signal
Mode	(B1)	• S-VHS SP
	(B2)	• S-VHS LP
	(B3)	• Picture Control / Smart Picture REC : Normal / Natural PB : Edit / Distinct
Equipment	(C)	• Oscilloscope
Measuring point Frequency marker	(D1) (D2)	• Y OUT terminal (75Ω terminated) • 3 [MHz]
External trigger	(E)	• TP111 (D.FF)
EVR mode EVR address	(F1) (F2)	• Jig RCU: Code “57” • A:03 (Press remote controller “0” and “3” keys)
Specified value	(G)	• SP: 3.6 ± 0.4 div. (–1 ± 1 dB) • LP: 3.2 ± 0.4 div. (–2 ± 1 dB)
Adjustment tool	(H)	• Jig RCU [PTU94023B] • Digit-key remote controller

(1) Apply the external trigger signal to D.FF (E) to observe the Y OUT waveform at the measuring point (D1).
(2) Record the signal (A2) in the mode (B1), and play back the recorded signal.
(3) Press the channel buttons (+, –) simultaneously to enter the manual tracking mode. This also brings tracking to the center (centre).
(4) Set the VCR to the EVR mode by transmitting the code (F1) from the Jig RCU.
(5) Set the EVR address to (F2) by pressing the button of the digit-key remote controller.
(6) Set the slope of the oscilloscope to the channel having higher (D2) marker level of the Y OUT waveform [signal (A2)]. Then set the 100 kHz marker level to the “4” scale on the oscilloscope. In this condition, adjust with the channel buttons (+, –) on the VCR (or on the remote controller) so that the (D2) marker level reaches the specified value (G).
(7) Release the EVR mode of the VCR by transmitting the code (F1) from the Jig RCU again. (When the EVR mode is released, the adjusted data is memorized.)
(8) Repeat steps (2) to (7) in the mode (B2).

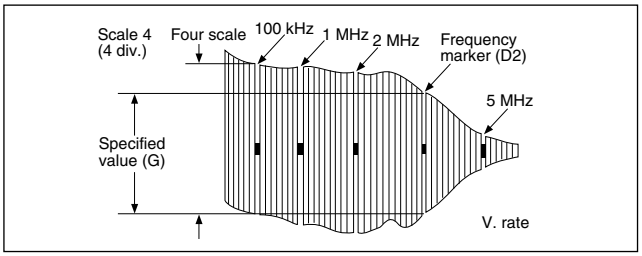


Fig. 3-3-5a Video EQ (Frequency Response)

3.3.6 AUTO PICTURE initial setting

Signal	(A1) (A2) (A3)	• Ext. input • Video: Optional • VHS tape
Mode	(B)	• EE → Auto adjust (SP/LP REC → PB)
Adjustment part	(F)	• Jig RCU : Code “58”
Specified value	(G)	• STOP mode
Adjustment tool	(H)	• Jig RCU [PTU94023B]

(1) Insert the cassette tape (A3).
(2) Set the VCR to the Auto adjust mode by transmitting the code (F) from the Jig RCU. When the VCR enters the stop mode, the adjustment is completed. When the VCR enters the eject mode, repeat steps (1) to (2) again.

3.4 AUDIO CIRCUIT

Notes:

- ***This adjustment should be done after the “REC color (colour) level adjustment” for the video circuit has been completed.***
- ***GND (Ground) should be taken from the Tuner shield case.***

3.4.1 Audio REC FM

Signal	(A1) (A2) (A3)	• Ext. input • Audio: No signal • Video: Color (colour) bar signal [PAL]
Mode	(B)	• S-VHS LP
Equipment	(C)	• Oscilloscope
Measuring point	(D)	• TP2253 (A. FM)
External trigger	(E)	• TP111 (D.FF)
EVR mode EVR address	(F1) (F2)	• Jig RCU: Code “57” • A: 30 (Press remote controller “3” and “0” keys.)
Specified value	(G1) (G2)	• 450 ± 100 mVp-p • More than 300 mVp-p
Adjustment tool	(H)	• Jig RCU [PTU94023B] • Digit-key remote controller

(1) Apply the external trigger signal to D.FF (E) to observe the Audio PB FM waveform at the measuring point (D).
(2) Record the signal (A3) with no audio signal input in the mode (B), and play back the recorded signal.
(3) Press the channel buttons (+, –) simultaneously to enter the manual tracking mode. This also brings tracking to the center (centre).
(4) If the A.PB FM level is not within the specified value (G1), perform the adjustment in a following procedure.
(5) Set the VCR to the EVR mode by transmitting the code (F1) from the Jig RCU.
(6) Set the EVR address to (F2) by pressing the button of the digit-key remote controller.
(7) Adjust with the channel buttons (+, –) on the VCR (or on the remote controller) so that the A.PB FM level of the higher channel level becomes the specified value (G1). (Adjust before recording, then confirm it by playing back.)
(8) If the specified value (G1) is not obtained, adjust with the channel buttons (+, –) so that the waveform level of the lower channel level becomes the specified value (G2). (Adjust before recording, then confirm it by playing back.)
(9) Release the EVR mode of the VCR by transmitting the code (F1) from the Jig RCU again. (When the EVR mode is released, the adjusted data is memorized.)

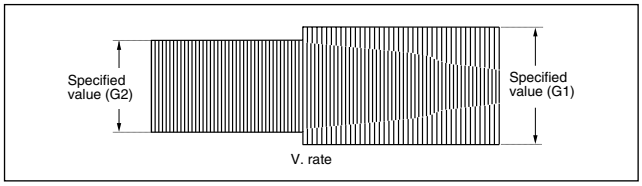


Fig. 3-4-1a Audio REC FM

3.5 SYSCON CIRCUIT

Note:

- ***When perform this adjustment, remove the Mechanism assembly.***

3.5.1 Timer clock

Signal	(A)	• No signal
Mode	(B)	• EE
Equipment	(C)	• Frequency counter
Measuring point Short point	(D1) (D2) (D3)	• IC3001 pin 61 • IC3001 pin 24 • C3026 + and –
Adjustment part	(F)	• C3025 (TIMER CLOCK)
Specified value	(G)	• 1024.008 ± 0.001 Hz (976.5549 ± 0.0010 µsec)

(1) Connect the frequency counter to the measuring point (D1).
(2) Connect the short wire between the short point (D2) and Vcc (5V).
(3) Short the leads of capacitor (D3) once in order to reset the microprocessor of the SYSCON.
(4) Disconnect the short wire between the short point (D2) and Vcc then connect it again.
(5) Adjust the Adjustment part (F) so that the output frequency becomes the specified value (G).

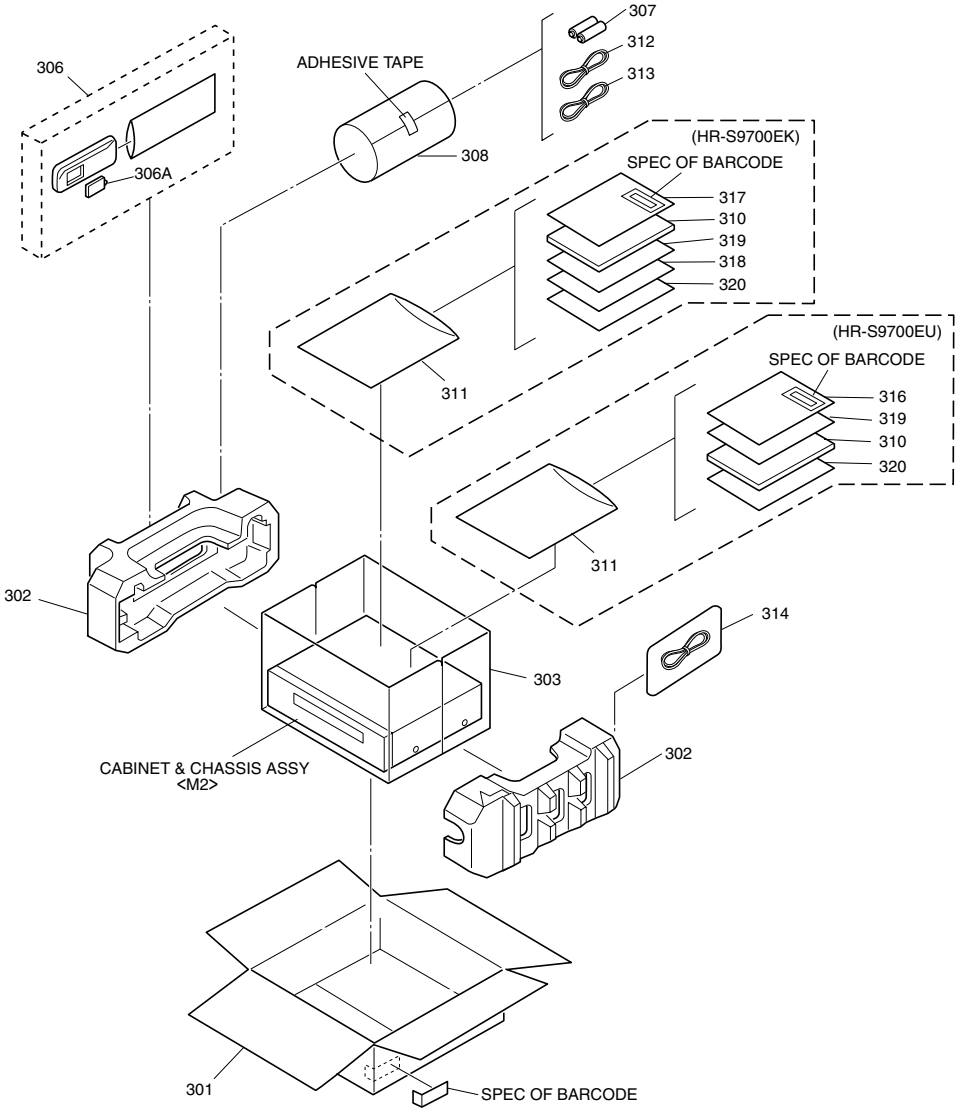
SECTION 5
PARTS LIST

SAFETY PRECAUTION

Parts identified by the ⚠ symbol are critical for safety. Replace only with specified part numbers.

5.1 PAC KING AND ACCESSORY ASSEMBLY <M1>

The instruction manual to be provided with this product will differ according to the destination.



#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION

****

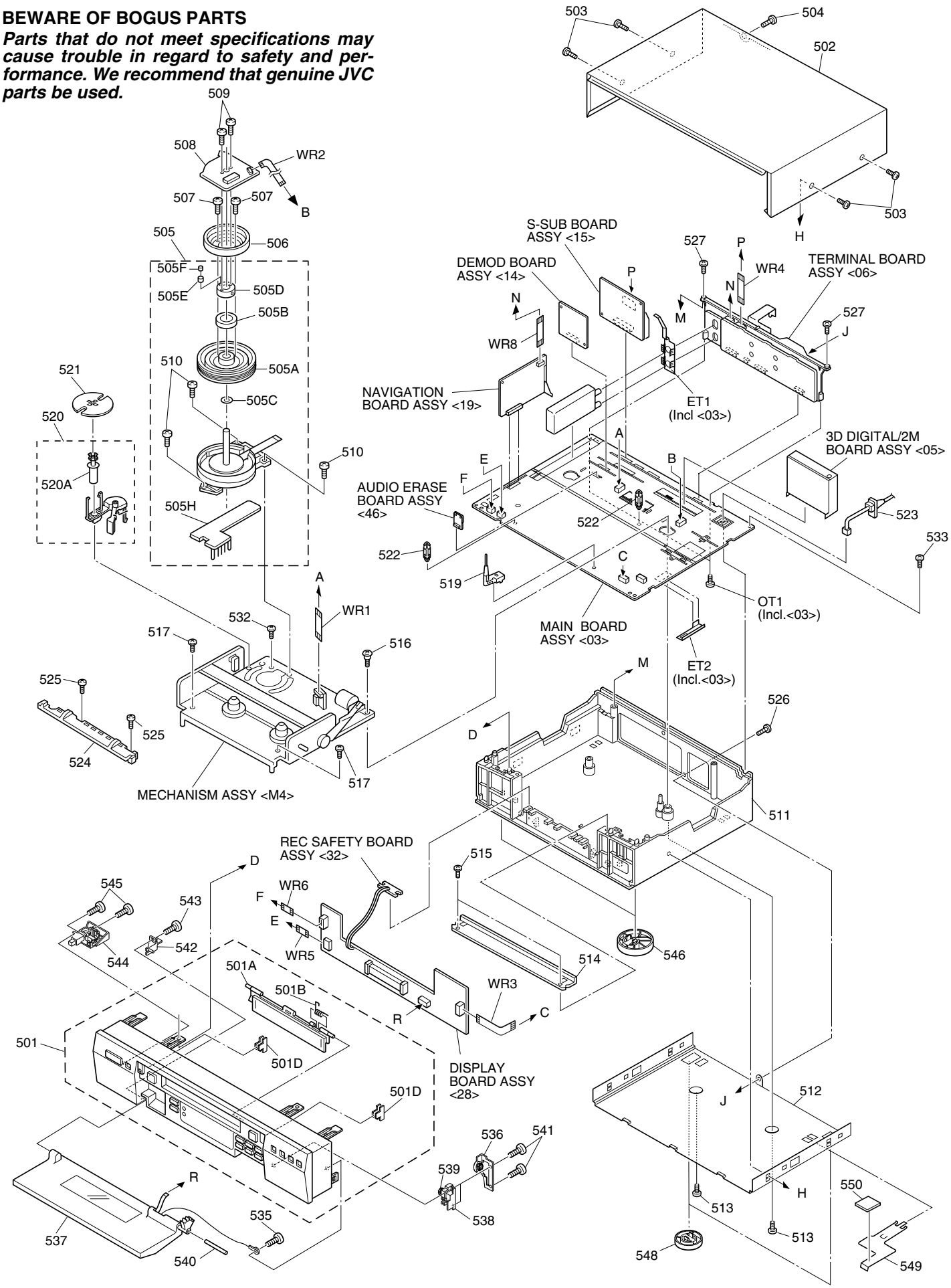
PACKING AND ACCESSORY ASSEMBLY <M1>

	301	LP30715-001B	PACKING CASE
	302	LP30667-001C	CUSHION ASSY
	303	PQM30021-95	POLY BAG
	306	LP20667-008B	REMOTE CONTROLLER
	306A	LP40225-002A	COVER(BATTERY)
	307	–	BATTERY,X2("R6"TYPE)
	308	QPC02202230P	POLY BAG
⚠	310	LPT0320-001B	INST BOOK(EN),S9700EK
⚠		LPT0328-001A	INST BOOK(EN),S9700EU
⚠		LPT0328-002A	INST BOOK(GE),S9700EU
⚠		LPT0328-003A	INST BOOK(FR),S9700EU
⚠		LPT0328-004A	INST BOOK(DU),S9700EU
⚠		LPT0328-005A	INST BOOK(SP),S9700EU
⚠		LPT0328-006A	INST BOOK(IT),S9700EU
⚠		LPT0328-007A	INST BOOK(DA),S9700EU
⚠		LPT0328-008A	INST BOOK(FI),S9700EU
⚠		LPT0328-009A	INST BOOK(SW),S9700EU
⚠		LPT0328-010A	INST BOOK(NO),S9700EU
⚠		LPT0328-011A	INST BOOK(PT),S9700EU
⚠		LPT0328-012A	INST BOOK(GR),S9700EU
⚠		LPT0328-013A	INST BOOK(CZ),S9700EU
⚠		LPT0328-014A	INST BOOK(PO),S9700EU
⚠		LPT0328-015A	INST BOOK(HU),S9700EU
⚠		LPT0328-016A	INST BOOK(RU),S9700EU
	311	QPC02503530P	POLY BAG
	312	PEAC0300-02	RF CABLE
	313	PEAC0358-120	S CABLE
	314	QAL0095-005	LED CABLE ASSY(Satellite Controller)
	316	BT-54013-1	WARRANTY CARD,S9700EU
	317	BT-54008-2	GUARANTY CARD,S9700EK
	318	LYT0194-001A	Q.CARD(JUK),S9700EK
	319	LP40437-001A	LABEL(S-VHS ET)
	320	LP40605-001A	SHEET

5.2 CABINET AND CHASSIS ASSEMBLY <M2>

BEWARE OF BOGUS PARTS

Parts that do not meet specifications may cause trouble in regard to safety and performance. We recommend that genuine JVC parts be used.



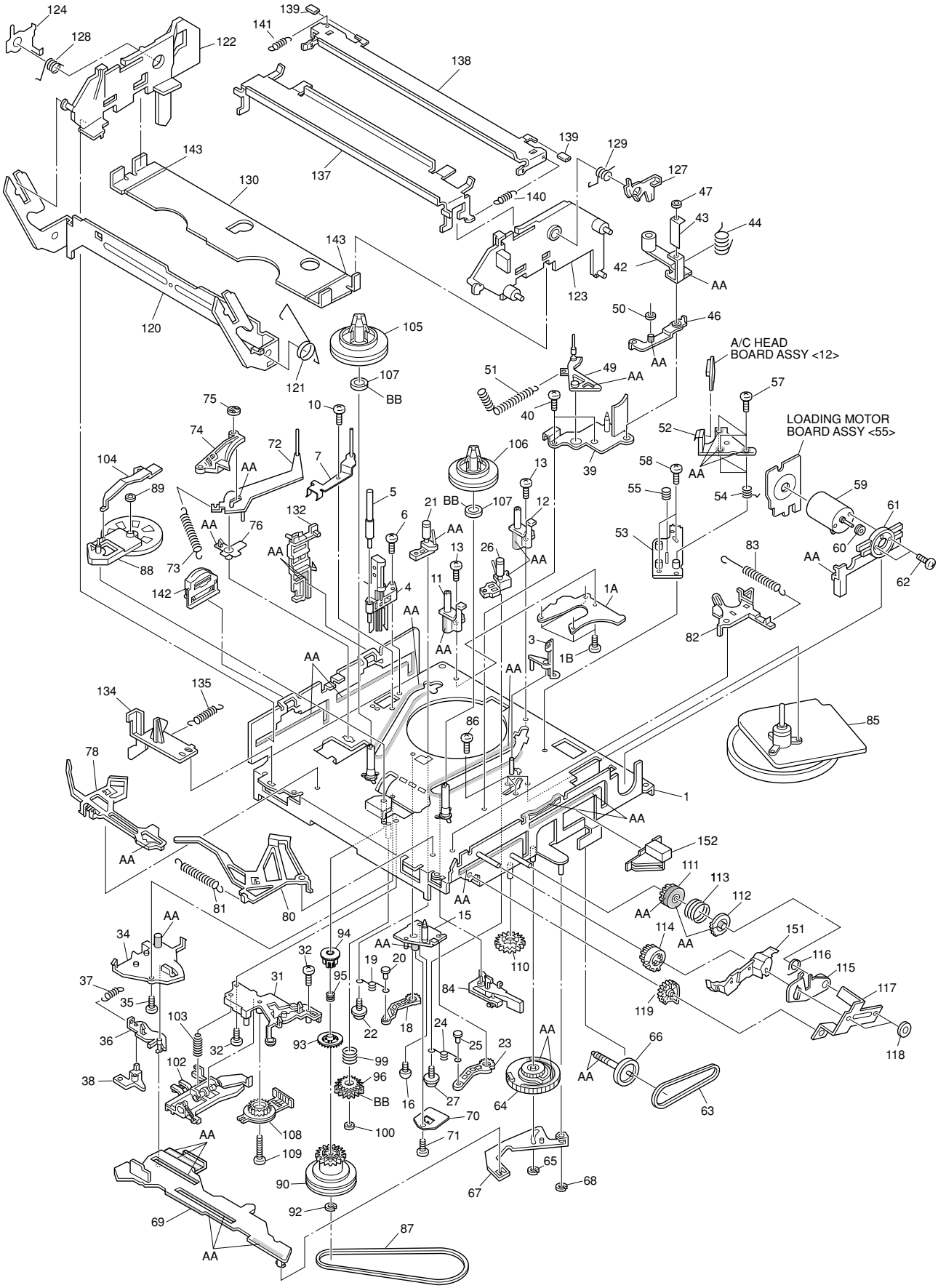
#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION
**********				

CABINET AND CHASSIS ASSEMBLY <M2>

⚠	501	LP10236-005C	FRONT PANEL ASSY,S9700EK
⚠		LP10236-006C	FRONT PANEL ASSY,S9700EU
	501A	LP20661-003A	CASSETTE DOOR
	501B	PQ46448	TORSION SPRING
	501D	PEME0879	MAGNET ASSY,X2
⚠	502	PQ11922-34	TOP COVER
	503	QYTDSF3010R	SCREW,X4 TOP COVER(SIDE)
	504	QYTDSF3010M	SCREW,TOP COVER(REAR)
	505	LP20319-021A	DRUM SUB ASSY
	505A	LP20030-022A	UPPER DRUM ASSY
	505B	LP40543-001A	CAP
	505C	PDM4444-19-2	WASHER
	505D	LP40572-001A	COLLAR ASSY
	505E	LP40323-001A	CONTACT
	505F	LP30004-014A	COMPRESSION SPRING
	505H	LPA20002-01C	SENSOR BOARD ASSY
	506	PDZ0179-2-4	ROTOR ASSY
	507	QYSPSP3006Z	SCREW,X2
⚠	508	QAR0119-001	STATOR ASSY
	509	QYSPSPH2606Z	SCREW,X2
	510	QYTDST2610Z	SCREW,X3 DRUM
⚠	511	LP10140-003G	BOTTOM CHASSIS
⚠	512	PQ11921-1-4	BOTTOM COVER
	513	QYTDSF3010Z	SCREW,X2
	514	LP30312-001B	BRACKET(CHASSIS)
	515	QYTDSF3010Z	SCREW,X2
	516	LP40700-001A	SPECIAL SCREW,MECHA
	517	QYTDSF3010Z	SCREW,X2 MECHA
	519	LP40407-001A	KNOB ASSY
	520	LP40370-001E	ROLLER ARM ASSY
	520A	PDM4311A-1	ROLLER ASSY
	521	PQ45160	INERTIA PLATE
	522	LP40226-001A	PC SUPPORT,X2
⚠	523	QMP4A10-170	POWER CORD,S9700EU
⚠		QMP51K0-170-K	POWER CORD,S9700EK
	524	LP30247-001C	FRONT BRACKET
	525	QYTDST2606Z	SCREW,X2
	526	QYTDSF3010M	SCREW,TERMINAL
	527	QYTPSFG3010Z	SCREW,X2 TERMINAL
	532	QYTDSF4012Z	SCREW,MECHA
	533	QYTDSF3010Z	SCREW,MAIN
	535	QYTDSF3010Z	SCREW,EARTH PLATE
	536	LP40582-002A	DAMPER ASSY
	537	LP20702-004A	MEMBRANE DOOR
	538	LP30570-001A	HOLDER(DAMPER)
	539	QZW0012-002	DAMPER
	540	LP40500-001A	SHAFT
	541	QYTDSF3010Z	SCREW,X2
	542	LP40501-001A	HOLDER(DOOR)
	543	QYTDSF3010Z	SCREW
	544	QZW0031-002	DOOR OPEN UNIT
	545	QYTDSF3010Z	SCREW,X2
	546	PQ46617A-1	FOOT ASSY,X2
	548	PQ35504-2	FOOT(2),X2
	549	LP40659-001A	EARTH PLATE(2)
	550	LP30002-092A	SPACER

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION
		WR1	QUQ112-0720CG	FFC WIRE,A/C HEAD CN2001
		WR2	QUQ212-0518CG	FFC WIRE,DRUM CN3001
		WR3	QUQ112-1414CG	FFC WIRE,DISPLAY CN3011
		WR4	QUQ112-1407CG	FFC WIRE,TERMINAL CN512
		WR5	QUQ212-0516CG	FFC WIRE,JACK CN902
		WR6	QUQ212-0416CG	FFC WIRE,S(FSA) CN901
		WR8	QUQ112-0826CG	FFC WIRE,NAVIGATION CN912

5.3 MECHANISM ASSEMBLY <M4>



Classification	Part No.	Symbol in drawing
Grease	KYODO-SH-P	AA
Oil	COSMO-HV56	BB

NOTE: The section marked in **AA** and **BB** indicate lubrication and greasing areas.

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION

****

MECHANISM ASSEMBLY <M4>

		1	LP20884-002F	MAIN DECK ASSY
		1A	LP40275-002B	PLATE(SUPPLY)
		1B	QYTDST2606Z	SCREW,X4
		3	LP30492-002B	GIDE POOL GUARD
		4	NAH0001-001	FULL ERASE HEAD
		5	LP40098-001B	GUIDE POLE(SUPPLY)
		6	QYTDST2608Z	SCREW
		7	LP40637-002A	TENSION STUD BASE ASSY
		10	QYTDST2606Z	SCREW
		11	LP30409-002C	UV CATCHER 2
		12	LP30409-002C	UV CATCHER 2
		13	QYTPST2606Z	SCREW,X2
		15	LP30223-003C	LOADING ARM GEAR SHAFT
		16	QYTDST2606Z	SCREW
		18	LP30224-001A	LOADING ARM GEAR(SUPPLY)
		19	LP40099-001A	TORSION ARM
		20	LP40100-001A	PIN
		21	LP40101-007A	POLE BASE ASSY(SUPPLY)
		22	QYSPSTG2606Z	SCREW
		23	LP40103-002B	LOADING ARM GEAR(TAKE UP)
		24	LP40099-001A	TORSION ARM
		25	LP40100-001A	PIN
		26	LP40104-008A	POLE BASE ASSY(TAKE UP)
		27	QYSPSTG2606Z	SCREW
		31	LP20233-004B	ROTARY ENCODER GUIDE
		32	QYTPST2606Z	SCREW
		34	LP30226-004D	CONTROL PLATE GUIDE
		35	QYTPST2605Z	SCREW
		36	LP30249-003B	TAKE UP LEVER
		37	LP30003-006A	TENSION SPRING
		38	LP40119-002A	TAKE UP HEAD
		39	LP20234-004B	LID GUIDE
		40	QYTDST2606Z	SCREW,X2
		42	LP40105-001B	PINCH ROLLER ARM ASSY
		43	LP40478-001A	PINCH ROLLER SHEET2
		44	LP40148-002A	TORSION SPRING
		46	LP40149-001C	PRESS LEVER ASSY
		47	LP30016-002A	SLIT WASHER
		49	LP40106-002E	GUIDE ARM ASSY
		50	LP30017-008A	SPACER
		51	LP40134-001C	TENSION SPRING
		52	QAH0010-004	AC HEAD
		53	LP30228-001A	HEAD BASE
		54	LP30004-013A	COMPRESSION SPRING,X3
		55	LP40236-001A	COMPRESSION SPRING
		57	LP40213-002B	SPECIAL SCREW,X3
		58	QYTDST2608Z	SCREW,X2
		59	QAR0023-001	LOADING MOTOR
		60	PQ43546-1-2	MOTOR PULLEY
		61	LP30230-001B	MOTOR GUIDE
		62	QYTPSP3003Z	SCREW,X2
		63	LP30005-003A	BELT,LOADING MOTOR
		64	LP20791-002C	CONTROL CAM
		65	PQM30017-24	SLIT WASHER
		66	LP40120-001A	WORM GEAR
		67	LP40107-002A	LINK LEVER ASSY
		68	PQM30017-24	SLIT WASHER
		69	LP10284-002E	CONTROL PLATE
		70	LP40379-001B	CONTROL BRACKET(1)
		71	QYTDSF2608M	SCREW
		72	LP40108-002A	TENSION ARM ASSY
		73	LP30003-010A	TENSION SPRING
		74	LP40109-003D	TENSION BRAKE ASSY
		75	PQ46302-1-3	ADJUST PIN
		76	LP30232-002A	TENSION ARM BEARING
		78	LP40532-009B	MAIN BRAKE ASSY (SUPPLY)
		80	LP40111-014B	MAIN BRAKE AY (TAKE UP)
		81	LP30003-029A	TENSION SPRING
		82	LP40112-001F	SUB BRAKE ASSY(TAKE UP)
		83	LP40357-001B	TENSION SPRING
		84	LP40461-001A	CAPSTAN BRAKE ASSY
		85	QAR0132-001	CAPSTAN MOTOR
		86	QYTDSF2606M	SCREW,X3
		87	LP30005-008A	BELT,CAPSTAN MOTOR
		88	LP40114-011B	IDLER ARM ASSY
		89	LP30016-001A	SLIT WASHER
		90	LP40593-003B	CLUTCH UNIT 3
		92	PQM30017-47	SLIT WASHER
		93	LP30696-002A	CLUTCH GEAR 4
		94	LP30697-003A	COUPLING GEAR
		95	LP40554-002A	COMPRESSION SPRING
		96	LP40442-001A	DIRECT GEAR
		99	LP40483-002A	COMPRESSION SPRING
		100	LP30016-001A	SLIT WASHER
		102	LP40484-003B	CHANGE LEVER ASSY
		103	LP40512-002B	COMPRESSION SPRING
		104	LP30236-002B	IDLER LEVER
		105	LP20237-003B	REEL DISK ASSY(SUPPLY)
		106	LP20238-003B	REEL DISK ASSY(TAKE UP)
		107	LP30017-015A	SPACER,X2
		108	QSW0554-003	ROTARY ENCODER
		109	QYTPST2620Z	SCREW
		110	LP30237-002B	CASSETTE GEAR
		111	LP30239-002G	LIMIT GEAR(1)
		112	LP30240-002G	LIMIT GEAR(2)
		113	LP40136-001E	TORSION SPRING
		114	LP30242-002A	RELAY GEAR
		115	LP30339-002E	OPENER GUIDE
		116	LP40545-001A	TORSION SPRING
		117	LP40214-001B	C.H.BRACKET
		118	PQM30017-47	SLIT WASHER,X2
		119	LP30243-001D	DRIVE GEAR
		120	LP20240-001F	DRIVE ARM
		121	LP40137-001A	TORSION SPRING
		122	LP10081-002L	SIDE HOLDER(L)
		123	LP10082-002M	SIDE HOLDER(R)
		124	LP30255-006A	LOCK LEVER(L)
		127	LP30256-001H	LOCK LEVER(R)
		128	LP40168-001A	TORSION SPRING(L)
		129	LP40218-001B	TORSION SPRING(R)
		130	LP30257-001G	CASSETTE HOLDER
		132	LP30244-002G	GUIDE RAIL
		134	LP30245-002E	REC SAFETY LEVER
		135	LP30003-004A	TENSION SPRING
		137	LP20578-001C	TOP GUIDE
		138	LP30500-001C	HOLD PLATE
		139	LP40450-003A	PAD,X2
		140	LP30003-025B	TENSION SPRING
		141	LP30003-024A	TENSION SPRING
		142	LP40481-003A	ROLLER CAM ASSY
		143	LP30019-014A	PAD,X2
		151	LP20324-003B	DOOR OPENER
		152	LP30493-001A	START SENSOR CAP

5.4 ELECTRICAL PARTS LIST

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION
**********				

MAIN BOARD ASSEMBLY <03>

		PW1	LPA10106-03C1	MAIN BOARD ASSY
		IC1	JCP8020-MSD-2	IC
		IC2501	LC85405JE	IC
		IC3001	HD6432194BA26F	IC(MCU)
		IC3002	S-80727AN-DQ-X	IC
			or R3111H271A	IC
			or S-80827ANUP-W	IC
		IC3003	AT24C16-10PC	IC
			or 24LC16B/P	IC
			or BR24C16	IC
		IC3004	BA6956AN	IC
		IC3501	BA6956AN	IC
		IC3601	BU2090FS	IC
		IC3651	BU2090FS	IC
		IC5101	STR-G6551	IC
		IC5301	LA5644	IC
		IC6080	NJM2125F	IC
		Q5	2SB1218A/QR/-X	TRANSISTOR
			or 2SA1576A/QR/-X	TRANSISTOR
			or 2PA1576/R/-X	TRANSISTOR
		Q7	2SD1819A/QRS/-X	TRANSISTOR
			or 2PC4081/R/-X	TRANSISTOR
			or 2SC4081/QRS/-X	TRANSISTOR
		Q8	2SD1819A/QRS/-X	TRANSISTOR
			or 2SC4081/QRS/-X	TRANSISTOR
			or 2PC4081/R/-X	TRANSISTOR
		Q9	2SB1218A/QR/-X	TRANSISTOR
			or 2PA1576/R/-X	TRANSISTOR
			or 2SA1576A/QR/-X	TRANSISTOR
		Q10	2SB1218A/QR/-X	TRANSISTOR
			or 2SA1576A/QR/-X	TRANSISTOR
			or 2PA1576/R/-X	TRANSISTOR
		Q17	DTC144WU	TRANSISTOR
			or PDTC144WU	TRANSISTOR
			or RN1309	TRANSISTOR
			or UN521E	TRANSISTOR
		Q18	2SB1218A/QR/-X	TRANSISTOR
			or 2PA1576/R/-X	TRANSISTOR
			or 2SA1576A/QR/-X	TRANSISTOR
		Q21	2SB1218A/QR/-X	TRANSISTOR
			or 2SA1576A/QR/-X	TRANSISTOR
			or 2PA1576/R/-X	TRANSISTOR
		Q24	2SB1218A/QR/-X	TRANSISTOR
			or 2PA1576/R/-X	TRANSISTOR
			or 2SA1576A/QR/-X	TRANSISTOR
		Q25	DTC144WU	TRANSISTOR
			or PDTC144WU	TRANSISTOR
			or RN1309	TRANSISTOR
			or UN521E	TRANSISTOR
		Q38	2SD1819A/QRS/-X	TRANSISTOR
			or 2PC4081/R/-X	TRANSISTOR
			or 2SC4081/QRS/-X	TRANSISTOR
		Q41	DTC144WU	TRANSISTOR
			or PDTC144WU	TRANSISTOR
			or RN1309	TRANSISTOR
			or UN521E	TRANSISTOR
		Q401	2SA1576A/QR/-X	TRANSISTOR
		Q402	2SA1576A/QR/-X	TRANSISTOR
		Q403	DTC144WU	TRANSISTOR
			or PDTC144WU	TRANSISTOR
			or RN1309	TRANSISTOR
			or UN521E	TRANSISTOR
		Q404	DTC144WU	TRANSISTOR
			or PDTC144WU	TRANSISTOR
			or RN1309	TRANSISTOR
			or UN521E	TRANSISTOR
		Q405	2SA1576A/QR/-X	TRANSISTOR
		Q2001	2SC4081/QRS/-X	TRANSISTOR
			or 2SD1819A/QRS/-X	TRANSISTOR
			or 2PC4081/R/-X	TRANSISTOR
		Q2002	2SC4081/QRS/-X	TRANSISTOR
			or 2PC4081/R/-X	TRANSISTOR
			or 2SD1819A/QRS/-X	TRANSISTOR
		Q2003	DTA144WU	TRANSISTOR
			or PDTA144WU	TRANSISTOR
			or RN2309	TRANSISTOR
			or UN511E	TRANSISTOR
		Q2004	DTC144WU	TRANSISTOR
			or PDTC144WU	TRANSISTOR
			or RN1309	TRANSISTOR
			or UN521E	TRANSISTOR
		Q2011	DTC144WU	TRANSISTOR
			or PDTC144WU	TRANSISTOR
			or RN1309	TRANSISTOR
			or UN521E	TRANSISTOR
		Q2052	2SA1576A/QR/-X	TRANSISTOR
			or 2SB1218A/QR/-X	TRANSISTOR
			or 2PA1576/R/-X	TRANSISTOR
		Q2053	DTC144WU	TRANSISTOR
			or PDTC144WU	TRANSISTOR
			or RN1309	TRANSISTOR
			or UN521E	TRANSISTOR
		Q2054	2SA1576A/QR/-X	TRANSISTOR
			or 2SB1218A/QR/-X	TRANSISTOR
			or 2PA1576/R/-X	TRANSISTOR
		Q2061	2SC4081/QRS/-X	TRANSISTOR
			or 2PC4081/R/-X	TRANSISTOR
			or 2SD1819A/QRS/-X	TRANSISTOR
		Q2062	2SA1576A/QR/-X	TRANSISTOR
			or 2SB1218A/QR/-X	TRANSISTOR
			or 2PA1576/R/-X	TRANSISTOR
		Q2102	DTC114EU	TRANSISTOR
			or PDTC114EU	TRANSISTOR
			or RN1302	TRANSISTOR
			or UN5211	TRANSISTOR
		Q2103	2SC4081/QRS/-X	TRANSISTOR
			or 2PC4081/R/-X	TRANSISTOR
			or 2SD1819A/QRS/-X	TRANSISTOR
		Q2104	DTA144WU	TRANSISTOR
			or PDTA144WU	TRANSISTOR
			or RN2309	TRANSISTOR
			or UN511E	TRANSISTOR
		Q2105	DTC144WU	TRANSISTOR
			or PDTC144WU	TRANSISTOR
			or UN521E	TRANSISTOR
			or RN1309	TRANSISTOR
		Q2108	2SC4081/QRS/-X	TRANSISTOR
			or 2SD1819A/QRS/-X	TRANSISTOR

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION
			or 2PC4081/R/-X	TRANSISTOR
		Q2251	DTA144WU	TRANSISTOR
			or PDTA144WU	TRANSISTOR
			or RN2309	TRANSISTOR
			or UN511E	TRANSISTOR
		Q2252	DTC114EU	TRANSISTOR
			or PDTC114EU	TRANSISTOR
			or RN1302	TRANSISTOR
			or UN5211	TRANSISTOR
		Q2501	2SC4081/QRS/-X	TRANSISTOR
			or 2PC4081/R/-X	TRANSISTOR
			or 2SD1819A/QRS/-X	TRANSISTOR
		Q2502	DTC144WU	TRANSISTOR
			or RN1309	TRANSISTOR
			or UN521E	TRANSISTOR
			or PDTC144WU	TRANSISTOR
		Q3001	2SD1819A/QRS/-X	TRANSISTOR
			or 2SC4081/QRS/-X	TRANSISTOR
			or 2PC4081/R/-X	TRANSISTOR
		Q3002	PTZ-NV16	PHOTO TRANSISTOR
			or PTZ-NV16A	PHOTO TRANSISTOR
		Q3003	PTZ-NV16	PHOTO TRANSISTOR
			or PTZ-NV16A	PHOTO TRANSISTOR
		Q3004	2SD1819A/QRS/-X	TRANSISTOR
			or 2PC4081/R/-X	TRANSISTOR
			or 2SC4081/QRS/-X	TRANSISTOR
		Q3005	2SD1819A/QRS/-X	TRANSISTOR
			or 2SC4081/QRS/-X	TRANSISTOR
			or 2PC4081/R/-X	TRANSISTOR
		Q3007	UN521E	TRANSISTOR
			or RN1309	TRANSISTOR
			or DTC144WU	TRANSISTOR
			or PDTC144WU	TRANSISTOR
		Q3009	UN521E	TRANSISTOR
			or RN1309	TRANSISTOR
			or DTC144WU	TRANSISTOR
			or PDTC144WU	TRANSISTOR
		Q3501	2SD1819A/QRS/-X	TRANSISTOR
			or 2SC4081/QRS/-X	TRANSISTOR
			or 2PC4081/R/-X	TRANSISTOR
		Q4001	UN5211	TRANSISTOR
			or PDTC114EU	TRANSISTOR
			or DTC114EU	TRANSISTOR
			or RN1302	TRANSISTOR
		Q4002	UN5211	TRANSISTOR
			or PDTC114EU	TRANSISTOR
			or RN1302	TRANSISTOR
			or DTC114EU	TRANSISTOR
		Q4003	UN5211	TRANSISTOR
			or PDTC114EU	TRANSISTOR
			or DTC114EU	TRANSISTOR
			or RN1302	TRANSISTOR
		Q5301	2SB1256	TRANSISTOR
		Q5302	DTC114TU	TRANSISTOR
			or PDTC114TU	TRANSISTOR
			or UN5215	TRANSISTOR
			or RN1311	TRANSISTOR
	⚠	Q5303	2SD2144S/UVW/-T	TRANSISTOR
		Q5304	2SD1450/ST/-T	TRANSISTOR
			or 2SD1302/ST/-T	TRANSISTOR
		Q5305	UN5111	TRANSISTOR

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
			or RN2302	TRANSISTOR	
			or PDTA114EU	TRANSISTOR	
			or DTA114EU	TRANSISTOR	
		Q5306	2SB1239	TRANSISTOR	
		Q5310	DTC114EU	TRANSISTOR	
			or PDTC114EU	TRANSISTOR	
			or UN5211	TRANSISTOR	
			or RN1302	TRANSISTOR	
		Q5311	2SA1576A/RS/-X	TRANSISTOR	
		Q5312	2SD2144S/UV/-T	TRANSISTOR	
		Q5318	DTA114EU	TRANSISTOR	
			or PDTA114EU	TRANSISTOR	
			or RN2302	TRANSISTOR	
			or UN5111	TRANSISTOR	
		Q5320	2SB1256	TRANSISTOR	
		Q5321	DTC114TU	TRANSISTOR	
			or PDTC114TU	TRANSISTOR	
			or RN1311	TRANSISTOR	
			or UN5215	TRANSISTOR	
		Q5322	DTA114EU	TRANSISTOR	
			or PDTA114EU	TRANSISTOR	
			or RN2302	TRANSISTOR	
			or UN5111	TRANSISTOR	
		Q6030	2SB1218A/QR/-X	TRANSISTOR	
			or 2SA1576A/QR/-X	TRANSISTOR	
			or 2PA1576/R/-X	TRANSISTOR	
		Q6031	DTC114EU	TRANSISTOR	
			or PDTC114EU	TRANSISTOR	
			or UN5211	TRANSISTOR	
			or RN1302	TRANSISTOR	
		Q6032	DTC114EU	TRANSISTOR	
			or PDTC114EU	TRANSISTOR	
			or UN5211	TRANSISTOR	
			or RN1302	TRANSISTOR	
		Q7201	2SC1317/RS/-T	TRANSISTOR	
		D3	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		D6	MTZJ5.1C	ZENER DIODE	
		D2001	1SS355	DIODE	
		D2121	MTZJ8.2C	ZENER DIODE	
		D2201	11ES2	DIODE	
			or 1A3G	DIODE	
		D2501	1SS133	DIODE	
		D3001	LNB2301L01VI	LE DIODE	
		D3002	1SS133	DIODE	
		D3003	RD39ES/B3/-T2	ZENER DIODE	
			or MTZJ39C	ZENER DIODE	
		D3004	11E2-T5	DIODE	
		D3005	11E2-T5	DIODE	
		D3007	1SS355	DIODE	
		D3008	1SS355	DIODE	
		D4001	1SS355	DIODE	
		D4002	1SS355	DIODE	
		D5001	S1WB/A/60-4102	BRIDGE DIODE	
			or S1WB(A)60F4072X	BRIDGE DIODE	
			or S1WB/A/60-X	BRIDGE DIODE	
		D5101	AU01	FR DIODE	
			or ERA18-04-T2	FR DIODE	
			or 1SR153-400-T2	FR DIODE	
			or 10ELS4	FR DIODE	
		D5102	AU01	FR DIODE	
			or ERA18-04-T2	FR DIODE	

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION
			or 10ELS4	FR DIODE
			or 1SR153-400-T2	FR DIODE
		D5103	AU01Z	FR DIODE
			or ERA18-02-T2	FR DIODE
			or PG104RS	FR DIODE
			or 10ELS2	FR DIODE
			or 1SR153-400-T2	FR DIODE
		D5201	AK04	DIODE
			or 1S4	SB DIODE
			or 11EQS04	SB DIODE
		D5202	FML-12S	FR DIODE
			or FCF06A20	FR DIODE
			or YG901C2	FR DIODE
			or SF5LC20U	FR DIODE
		D5206	FMB-24	BARRIER DIODE
			or FSQ05A04B	SB DIODE
			or YG801C04	SB DIODE
			or SB640FCT	SB DIODE
			or SF5SC4	SB DIODE
		D5209	ERA18-02-T2	FR DIODE
			or PG104RS	FR DIODE
			or 10ELS2	FR DIODE
			or 1SR153-400-T2	FR DIODE
		D5210	AU01Z	FR DIODE
			or ERA18-02-T2	FR DIODE
			or 10ELS2	FR DIODE
			or PG104RS	FR DIODE
			or 1SR153-400-T2	FR DIODE
		D5211	AU01Z	FR DIODE
			or ERA18-02-T2	FR DIODE
			or 1SR153-400-T2	FR DIODE
			or 10ELS2	FR DIODE
			or PG104RS	FR DIODE
		D5214	ERA18-02-T2	FR DIODE
			or 1SR153-400-T2	FR DIODE
			or 10ELS2	FR DIODE
			or PG104RS	FR DIODE
		D5301	MTZJ15A	ZENER DIODE
			or RD15ES/B1/-T2	ZENER DIODE
		D5302	MTZJ6.8A	ZENER DIODE
			or RD6.8ES/B1/-T2	ZENER DIODE
		D5303	MTZJ27C	ZENER DIODE
			or RD27ES/B3/-T2	ZENER DIODE
		D5304	1SS133	DIODE
			or 1SS270A	DIODE
		D5305	11ES2	DIODE
			or 1A3G	DIODE
			or ERA15-02-T2	DIODE
		D5306	MTZJ12A	ZENER DIODE
			or RD12ES/B1/-T2	ZENER DIODE
		D5307	1SS133	DIODE
			or 1SS270A	DIODE
		D5308	1SS133	DIODE
			or 1SS270A	DIODE
		D5309	1SS133	DIODE
			or 1SS270A	DIODE
		D5310	MTZJ11C	ZENER DIODE
			or RD11ES/B3/-T2	ZENER DIODE
		D5315	11ES2	DIODE
			or ERA15-02-T2	DIODE
			or 1A3G	DIODE

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		D6002	HZ30-2L-T2	ZENER DIODE	
			or HZ30-2LTD	Z DIODE (M)	
		R1	NRSA02J-682X	MG RESISTOR	6.8kΩ,1/10W
		R2	NRSA02J-152X	MG RESISTOR	1.5kΩ,1/10W
		R5	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R6	NRSA02J-273X	MG RESISTOR	27kΩ,1/10W
		R7	NRSA02J-681X	MG RESISTOR	680Ω,1/10W
		R8	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R9	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R23	NRSA02J-182X	MG RESISTOR	1.8kΩ,1/10W
		R24	NRSA02J-331X	MG RESISTOR	330Ω,1/10W
		R25	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R26	NRSA02J-682X	MG RESISTOR	6.8kΩ,1/10W
		R27	NRSA02J-221X	MG RESISTOR	220Ω,1/10W
		R28	NRSA02J-221X	MG RESISTOR	220Ω,1/10W
		R29	NRSA02J-681X	MG RESISTOR	680Ω,1/10W
		R30	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R31	NRSA02J-152X	MG RESISTOR	1.5kΩ,1/10W
		R32	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R33	NDC21HJ-8R0X	CAPACITOR	8pF,50V
		R34	NDC21HJ-390X	CAPACITOR	39pF,50V
		R36	NRSA02J-182X	MG RESISTOR	1.8kΩ,1/10W
		R38	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R40	NRSA02J-222X	MG RESISTOR	2.2kΩ,1/10W
		R41	NRSA02J-392X	MG RESISTOR	3.9kΩ,1/10W
		R42	NRSA02J-681X	MG RESISTOR	680Ω,1/10W
		R46	NRSA02J-271X	MG RESISTOR	270Ω,1/10W
		R48	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R51	NRSA02J-122X	MG RESISTOR	1.2kΩ,1/10W
		R54	NRSA02J-152X	MG RESISTOR	1.5kΩ,1/10W
		R62	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R68	NRSA02J-222X	MG RESISTOR	2.2kΩ,1/10W
		R70	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R77	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R84	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R88	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R90	NRSA02J-391X	MG RESISTOR	390Ω,1/10W
		R92	NRSA02J-152X	MG RESISTOR	1.5kΩ,1/10W
		R93	NRSA02J-222X	MG RESISTOR	2.2kΩ,1/10W
		R104	NRSA02J-682X	MG RESISTOR	6.8kΩ,1/10W
		R113	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R114	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R117	NRSA02J-104X	MG RESISTOR	100kΩ,1/10W
		R401	NRSA02J-221X	MG RESISTOR	220Ω,1/10W
		R402	NRSA02J-681X	MG RESISTOR	680Ω,1/10W
		R403	NRSA02J-561X	MG RESISTOR	560Ω,1/10W
		R404	NRSA02J-473X	MG RESISTOR	47kΩ,1/10W
		R405	NRSA02J-683X	MG RESISTOR	68kΩ,1/10W
		R406	NRSA02J-393X	MG RESISTOR	39kΩ,1/10W
		R407	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R408	NRSA02J-473X	MG RESISTOR	47kΩ,1/10W
		R409	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R2001	NRSA02J-681X	MG RESISTOR	680Ω,1/10W
		R2002	NRSA02J-272X	MG RESISTOR	2.7kΩ,1/10W
		R2003	QRE141J-101Y	RESISTOR	100Ω,1/4W
		R2005	QRE141J-0R0Y	RESISTOR	0Ω,1/4W
		R2006	QRE141J-393Y	RESISTOR	39kΩ,1/4W
		R2007	NRSA02J-393X	MG RESISTOR	39kΩ,1/10W
		R2008	NRSA02J-123X	MG RESISTOR	12kΩ,1/10W
		R2009	NRSA02J-123X	MG RESISTOR	12kΩ,1/10W
		R2010	NRSA02J-123X	MG RESISTOR	12kΩ,1/10W

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		R2011	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R2012	NRSA02J-153X	MG RESISTOR	15kΩ,1/10W
		R2013	NRSA02J-682X	MG RESISTOR	6.8kΩ,1/10W
		R2014	NRSA02J-224X	MG RESISTOR	220kΩ,1/10W
		R2015	NRSA02J-271X	MG RESISTOR	270Ω,1/10W
		R2016	NRSA02J-393X	MG RESISTOR	39kΩ,1/10W
		R2017	NRSA02J-183X	MG RESISTOR	18kΩ,1/10W
		R2018	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R2019	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R2020	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R2053	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R2056	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R2057	NRSA02J-473X	MG RESISTOR	47kΩ,1/10W
		R2058	NRSA02J-183X	MG RESISTOR	18kΩ,1/10W
		R2059	NRSA02J-473X	MG RESISTOR	47kΩ,1/10W
		R2060	NRSA02J-183X	MG RESISTOR	18kΩ,1/10W
		R2061	NRSA02J-273X	MG RESISTOR	27kΩ,1/10W
		R2062	NRSA02J-3R3X	MG RESISTOR	3.3Ω,1/10W
		R2063	NRSA02J-151X	MG RESISTOR	150Ω,1/10W
		R2064	NRSA02J-473X	MG RESISTOR	47kΩ,1/10W
		R2065	NRSA02J-183X	MG RESISTOR	18kΩ,1/10W
		R2102	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R2103	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R2104	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R2105	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R2106	NRSA02J-681X	MG RESISTOR	680Ω,1/10W
		R2107	NRSA02J-122X	MG RESISTOR	1.2kΩ,1/10W
		R2109	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R2111	NRSA02J-222X	MG RESISTOR	2.2kΩ,1/10W
		R2121	QRE141J-151Y	RESISTOR	150Ω,1/4W
		R2202	NRSA02J-222X	MG RESISTOR	2.2kΩ,1/10W
		R2203	NRSA02J-222X	MG RESISTOR	2.2kΩ,1/10W
		R2204	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R2205	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R2206	QRE141J-101Y	RESISTOR	100Ω,1/4W
		R2208	QRE141J-101Y	RESISTOR	100Ω,1/4W
		R2209	QRE141J-101Y	RESISTOR	100Ω,1/4W
		R2210	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R2211	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R2213	QRE141J-393Y	RESISTOR	39kΩ,1/4W
		R2215	NRSA02J-153X	MG RESISTOR	15kΩ,1/10W
		R2217	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R2218	NRSA02J-393X	MG RESISTOR	39kΩ,1/10W
		R2219	QRE141J-393Y	RESISTOR	39kΩ,1/4W
		R2220	QRE141J-393Y	RESISTOR	39kΩ,1/4W
		R2222	NRSA02J-123X	MG RESISTOR	12kΩ,1/10W
		R2223	NRSA02J-123X	MG RESISTOR	12kΩ,1/10W
		R2224	NRSA02J-123X	MG RESISTOR	12kΩ,1/10W
		R2225	NRSA02J-153X	MG RESISTOR	15kΩ,1/10W
		R2226	NRSA02J-123X	MG RESISTOR	12kΩ,1/10W
		R2227	NRSA02J-123X	MG RESISTOR	12kΩ,1/10W
		R2228	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R2229	QRE141J-563Y	RESISTOR	56kΩ,1/4W
		R2251	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R2252	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R2501	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R2502	NRSA02J-562X	MG RESISTOR	5.6kΩ,1/10W
		R2503	NRSA02J-563X	MG RESISTOR	56kΩ,1/10W
		R2504	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R2505	NRSA02J-105X	MG RESISTOR	1MΩ,1/10W
		R2506	NRSA02J-473X	MG RESISTOR	47kΩ,1/10W
		R2507	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R2508	NRSA02J-333X	MG RESISTOR	33kΩ,1/10W
		R2509	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R2510	NRSA02J-104X	MG RESISTOR	100kΩ,1/10W
		R2511	NRSA02J-124X	MG RESISTOR	120kΩ,1/10W
		R2512	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R2513	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R2514	NRSA02J-562X	MG RESISTOR	5.6kΩ,1/10W
		R2519	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R2520	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R2522	NRSA02J-682X	MG RESISTOR	6.8kΩ,1/10W
		R3011	QRE141J-0R0Y	RESISTOR	0Ω,1/4W
		R3012	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3013	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3016	QRE141J-0R0Y	RESISTOR	0Ω,1/4W
		R3017	QRE141J-0R0Y	RESISTOR	0Ω,1/4W
		R3018	QRE141J-682Y	RESISTOR	6.8kΩ,1/4W
		R3019	QRE141J-0R0Y	RESISTOR	0Ω,1/4W
		R3022	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3025	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3026	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3027	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3029	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3030	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3031	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3032	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3038	NRSA02J-152X	MG RESISTOR	1.5kΩ,1/10W
		R3040	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3041	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3042	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3044	QRE141J-0R0Y	RESISTOR	0Ω,1/4W
		R3046	QRE141J-102Y	RESISTOR	1kΩ,1/4W
		R3047	QRE141J-102Y	RESISTOR	1kΩ,1/4W
		R3048	QRE141J-102Y	RESISTOR	1kΩ,1/4W
		R3049	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3050	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3051	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R3052	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R3053	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R3054	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3055	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3056	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3057	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3058	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3059	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3060	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R3061	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R3062	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3063	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3066	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3069	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R3071	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3072	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3073	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3075	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R3076	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R3078	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3083	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3085	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3086	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3087	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		R3088	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3089	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3090	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3091	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3094	QRE141J-0R0Y	RESISTOR	0Ω,1/4W
		R3095	QRE141J-0R0Y	RESISTOR	0Ω,1/4W
		R3096	QRE141J-0R0Y	RESISTOR	0Ω,1/4W
		R3097	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3103	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3105	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3106	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3201	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3202	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3203	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3204	NRSA02J-222X	MG RESISTOR	2.2kΩ,1/10W
		R3205	QRE141J-181Y	RESISTOR	180Ω,1/4W
		R3206	QRE141J-183Y	RESISTOR	18kΩ,1/4W
		R3207	NRSA02J-183X	MG RESISTOR	18kΩ,1/10W
		R3208	NRSA02J-181X	MG RESISTOR	180Ω,1/10W
		R3209	NRSA02J-273X	MG RESISTOR	27kΩ,1/10W
		R3210	NRSA02J-181X	MG RESISTOR	180Ω,1/10W
		R3211	NRSA02J-273X	MG RESISTOR	27kΩ,1/10W
		R3212	NRSA02J-474X	MG RESISTOR	470kΩ,1/10W
		R3213	NRSA02J-334X	MG RESISTOR	330kΩ,1/10W
		R3214	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3215	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3216	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3217	NRSA02J-562X	MG RESISTOR	5.6kΩ,1/10W
		R3218	QRE141J-472Y	RESISTOR	4.7kΩ,1/4W
		R3219	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3220	NRSA02J-104X	MG RESISTOR	100kΩ,1/10W
		R3222	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3223	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3224	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3225	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3229	NRSA02J-105X	MG RESISTOR	1MΩ,1/10W
		R3230	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3231	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3233	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3234	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3235	NRSA02J-222X	MG RESISTOR	2.2kΩ,1/10W
		R3236	NRSA02J-332X	MG RESISTOR	3.3kΩ,1/10W
		R3237	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3238	QRE141J-103Y	RESISTOR	10kΩ,1/4W
		R3239	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3241	NRSA02J-104X	MG RESISTOR	100kΩ,1/10W
		R3242	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3244	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3251	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3501	NRSA02J-153X	MG RESISTOR	15kΩ,1/10W
		R3502	NRSA02J-272X	MG RESISTOR	2.7kΩ,1/10W
		R3503	NRSA02J-153X	MG RESISTOR	15kΩ,1/10W
		R3504	NRSA02J-223X	MG RESISTOR	22kΩ,1/10W
		R3505	NRSA02J-562X	MG RESISTOR	5.6kΩ,1/10W
		R3506	NRSA02J-123X	MG RESISTOR	12kΩ,1/10W
		R3671	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3672	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3673	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R4001	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R4003	NRSA02J-561X	MG RESISTOR	560Ω,1/10W
		R4004	NRSA02J-561X	MG RESISTOR	560Ω,1/10W
		R4005	NRSA02J-562X	MG RESISTOR	5.6kΩ,1/10W
		R4007	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R4008	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R4009	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R4010	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R4011	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R4012	NRSA02J-222X	MG RESISTOR	2.2kΩ,1/10W
		R4013	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R4014	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R4015	NRSA02J-223X	MG RESISTOR	22kΩ,1/10W
		R4016	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R4017	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R4018	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R4019	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R4020	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R4021	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R5101	QRG02GJ-104	OMF RESISTOR	100kΩ,2W
		R5102	QRE141J-390Y	RESISTOR	39Ω,1/4W
		R5103	NRSA02J-681X	MG RESISTOR	680Ω,1/10W
		R5104	QRG029J-154G	OMF RESISTOR	150kΩ,2W
		R5105	QRT01DJ-R39X	MF RESISTOR	0.39Ω,1W
		R5106	NRSA02J-562X	MG RESISTOR	5.6kΩ,1/10W
		R5301	QRE141J-1R0Y	RESISTOR	1Ω,1/4W
		R5302	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R5303	NRSA02J-122X	MG RESISTOR	1.2kΩ,1/10W
	⚠	R5304	QRZ9005-221X	FUSI RESISTOR	220Ω,1/4W
		R5305	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R5306	NRSA02J-683X	MG RESISTOR	68kΩ,1/10W
		R5307	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R5308	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R5309	QRE141J-222Y	RESISTOR	2.2kΩ,1/4W
		R5310	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R5311	NRSA02J-222X	MG RESISTOR	2.2kΩ,1/10W
		R5313	QRE141J-222Y	RESISTOR	2.2kΩ,1/4W
		R5314	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R5317	NRSA02J-273X	MG RESISTOR	27kΩ,1/10W
		R5318	NRSA02J-273X	MG RESISTOR	27kΩ,1/10W
		R5319	QRE141J-221Y	RESISTOR	220Ω,1/4W
		R5321	QRE141J-221Y	RESISTOR	220Ω,1/4W
		R5322	NRSA02J-473X	MG RESISTOR	47kΩ,1/10W
		R5323	NRSA02J-473X	MG RESISTOR	47kΩ,1/10W
		R5327	NRVA02D-303X	CMF RESISTOR	30kΩ,1/10W
		R5329	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R5330	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R5332	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R5334	QRE141J-103Y	RESISTOR	10kΩ,1/4W
		R5335	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R5336	NRSA02J-222X	MG RESISTOR	2.2kΩ,1/10W
		R6020	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R6021	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R6022	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R6030	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R6031	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R6032	NRSA02J-392X	MG RESISTOR	3.9kΩ,1/10W
		R6033	NRSA02J-182X	MG RESISTOR	1.8kΩ,1/10W
		R6050	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R6051	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R6052	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R6060	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R6061	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R6508	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		R6510	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R6553	QRE141J-471Y	RESISTOR	470Ω,1/4W
		R6554	QRE141J-471Y	RESISTOR	470Ω,1/4W
		R7202	NRSA02J-221X	MG RESISTOR	220Ω,1/10W
		R7203	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R7204	QRE121J-100Y	RESISTOR	10Ω,1/2W
		R7251	NRSA02J-750X	MG RESISTOR	75Ω,1/10W
		R7252	NRSA02J-750X	MG RESISTOR	75Ω,1/10W
		R7253	NRSA02J-750X	MG RESISTOR	75Ω,1/10W
		C1	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C2	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C3	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C4	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C5	QEKC0JM-337	E CAPACITOR	330µF,6.3V
		C6	NCB11EK-104X	CAPACITOR	0.1µF,25V
		C7	NCB21HK-102X	CAPACITOR	0.001µF,50V
		C8	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C9	QETN1HM-225	E CAPACITOR	2.2µF,50V
		C10	NDC21HJ-151X	CAPACITOR	150pF,50V
		C11	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C14	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C15	NCB21EK-103X	CAPACITOR	0.01µF,25V
		C16	NCB11EK-104X	CAPACITOR	0.1µF,25V
		C17	QEKJ1HM-335	E CAPACITOR	3.3µF,50V
		C18	QEKJ1HM-105	E CAPACITOR	1µF,50V
		C19	QEKJ1HM-225	E CAPACITOR	2.2µF,50V
		C20	QEKJ1HM-105	E CAPACITOR	1µF,50V
		C21	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C22	QEKJ0JM-227	E CAPACITOR	220µF,6.3V
		C23	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C24	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C25	NDC21HJ-6R0X	CAPACITOR	6pF,50V
		C26	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C27	NCB21HK-223X	CAPACITOR	0.022µF,50V
		C28	QEKJ1HM-335	E CAPACITOR	3.3µF,50V
		C29	NCB21EK-333X	CAPACITOR	0.033µF,25V
		C30	NCB21CK-474X	CAPACITOR	0.47µF,16V
		C31	QEKJ0JM-107	E CAPACITOR	100µF,6.3V
		C32	QCBB1HK-103	CAPACITOR	0.01µF,50V
		C33	QEKJ1HM-225	E CAPACITOR	2.2µF,50V
		C34	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C35	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C36	QEKJ1EM-475	E CAPACITOR	4.7µF,25V
		C37	NCB21AK-105X	CAPACITOR	1µF,10V
		C38	QEKJ0JM-337	E CAPACITOR	330µF,6.3V
		C39	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C40	QEKJ1CM-106	E CAPACITOR	10µF,16V
		C45	QCFB1HZ-104	CAPACITOR	0.1µF,50V
		C53	NDC21HJ-101X	CAPACITOR	100pF,50V
		C59	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C60	QEKJ0JM-227	E CAPACITOR	220µF,6.3V
		C61	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C63	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C64	NDC21HJ-220X	CAPACITOR	22pF,50V
		C65	QEKJ1HM-105	E CAPACITOR	1µF,50V
		C72	NDC21HJ-470X	CAPACITOR	47pF,50V
		C73	NDC21HJ-120X	CAPACITOR	12pF,50V
		C80	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C84	NRSA02J-682X	MG RESISTOR	6.8kΩ,1/10W
		C93	NDC21HJ-220X	CAPACITOR	22pF,50V
		C94	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		C103	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C106	NCB21HK-821X	CAPACITOR	820pF,50V
		C108	NDC21HJ-680X	CAPACITOR	68pF,50V
		C109	NCB21CK-224X	CAPACITOR	0.22µF,16V
		C110	NDC21HJ-820X	CAPACITOR	82pF,50V
		C114	NDC21HJ-181X	CAPACITOR	180pF,50V
		C401	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C402	NCB21HK-223X	CAPACITOR	0.022µF,50V
		C403	NDC21HJ-131X	CAPACITOR	130pF,50V
		C404	NDC21HJ-470X	CAPACITOR	47pF,50V
		C406	NCB21HK-102X	CAPACITOR	0.001µF,50V
		C407	NDC21HJ-150X	CAPACITOR	15pF,50V
		C2001	QTE1H44-475Z	E CAPACITOR	4.7µF,50V
		C2002	QEKJ1CM-106	E CAPACITOR	10µF,16V
		C2003	QEKJ0JM-476	E CAPACITOR	47µF,6.3V
		C2004	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C2005	QEKJ1EM-475	E CAPACITOR	4.7µF,25V
		C2006	NCB21HK-123X	CAPACITOR	0.012µF,50V
		C2007	QEKJ1CM-226	E CAPACITOR	22µF,16V
		C2008	QERF1EM-475	E CAPACITOR	4.7µF,25V
		C2009	NCB21HK-102X	CAPACITOR	0.001µF,50V
		C2010	NCB21HK-152X	CAPACITOR	0.0015µF,50V
		C2011	QEKJ1EM-475	E CAPACITOR	4.7µF,25V
		C2012	QEKJ1EM-475	E CAPACITOR	4.7µF,25V
		C2013	NCB21HK-331X	CAPACITOR	330pF,50V
		C2021	NCB21HK-682X	CAPACITOR	0.0068µF,50V
		C2051	NCB21HK-331X	CAPACITOR	330pF,50V
		C2061	QFLC1HJ-333Z	F CAPACITOR	0.033µF,50V
		C2062	NCB21HK-332X	CAPACITOR	0.0033µF,50V
		C2063	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C2064	QEKJ1CM-106	E CAPACITOR	10µF,16V
		C2101	QEKJ1CM-106	E CAPACITOR	10µF,16V
		C2102	QEKJ1CM-106	E CAPACITOR	10µF,16V
		C2104	NCB21CK-104X	CAPACITOR	0.1µF,16V
		C2202	NCB21EK-333X	CAPACITOR	0.033µF,25V
		C2203	QEKJ1CM-106	E CAPACITOR	10µF,16V
		C2204	QDGB1HK-102Y	CAPACITOR	0.001µF,50V
		C2205	QEKJ1HM-105	E CAPACITOR	1µF,50V
		C2206	QEKJ1CM-106	E CAPACITOR	10µF,16V
		C2207	QTE1E41-476	E CAPACITOR	47µF,25V
		C2208	QTE1H44-475Z	E CAPACITOR	4.7µF,50V
		C2209	QERF1HM-104	E CAPACITOR	0.1µF,50V
		C2210	QEKJ1HM-104	E CAPACITOR	0.1µF,50V
		C2211	QERF1HM-105	E CAPACITOR	1µF,50V
		C2212	QEKJ1HM-105	E CAPACITOR	1µF,50V
		C2213	QEKJ1CM-106	E CAPACITOR	10µF,16V
		C2214	QEKJ1CM-106	E CAPACITOR	10µF,16V
		C2215	QERF1EM-475	E CAPACITOR	4.7µF,25V
		C2216	QEKJ1HM-474	E CAPACITOR	0.47µF,50V
		C2217	QEKJ1CM-106	E CAPACITOR	10µF,16V
		C2218	QEKJ1HM-474	E CAPACITOR	0.47µF,50V
		C2219	QEKJ1CM-106	E CAPACITOR	10µF,16V
		C2220	QEKJ1EM-475	E CAPACITOR	4.7µF,25V
		C2221	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C2222	QEKJ1HM-474	E CAPACITOR	0.47µF,50V
		C2223	QEKJ1HM-474	E CAPACITOR	0.47µF,50V
		C2224	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C2225	QEKJ1EM-475	E CAPACITOR	4.7µF,25V
		C2226	QEKJ1CM-106	E CAPACITOR	10µF,16V
		C2227	NCB21CK-104X	CAPACITOR	0.1µF,16V
		C2228	NCB21CK-104X	CAPACITOR	0.1µF,16V

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		C2229	NDC21HJ-101X	CAPACITOR	100pF,50V
		C2230	NDC21HJ-101X	CAPACITOR	100pF,50V
		C2251	QEKJ1CM-476	E CAPACITOR	47µF,16V
		C2252	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C2253	NCB21CK-104X	CAPACITOR	0.1µF,16V
		C2254	NCB21CK-104X	CAPACITOR	0.1µF,16V
		C2255	NDC21HJ-181X	CAPACITOR	180pF,50V
		C2501	QERF0JM-107	E CAPACITOR	100µF,6.3V
		C2502	NCB21HK-562X	CAPACITOR	0.0056µF,50V
		C2503	QERF1HM-105	E CAPACITOR	1µF,50V
		C2505	QEKJ0JM-107	E CAPACITOR	100µF,6.3V
		C2506	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C2507	QERF1CM-226	E CAPACITOR	22µF,16V
		C2508	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C2509	QERF1CM-106	E CAPACITOR	10µF,16V
		C2510	QEKJ1CM-476	E CAPACITOR	47µF,16V
		C2511	NCB21HK-222X	CAPACITOR	0.0022µF,50V
		C2512	NDC21HJ-331X	CAPACITOR	330pF,50V
		C2513	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C2518	NCB21HK-102X	CAPACITOR	0.001µF,50V
		C2519	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C2520	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C3001	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C3002	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C3003	QEKJ1CM-106	E CAPACITOR	10µF,16V
		C3004	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C3008	NCB21HK-102X	CAPACITOR	0.001µF,50V
		C3010	QEZ0244-229	EDL CAPACITOR	0.0022F,5.5V
		C3012	QEKJ0JM-107	E CAPACITOR	100µF,6.3V
		C3015	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C3016	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C3022	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C3024	NDC21HJ-220X	CAPACITOR	22pF,50V
		C3025	QAT3725-300Z	TRIM CAPACITOR,TIMER CLOCK	
		C3026	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C3027	NBE20JM-106X	T CAPACITOR	10µF,6.3V
		C3030	NBE20JM-226X	T CAPACITOR	22µF,6.3V
		C3031	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C3032	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C3033	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C3036	NDC21HJ-180X	CAPACITOR	18pF,50V
		C3037	NDC21HJ-120X	CAPACITOR	12pF,50V
		C3040	QDYB1CM-103Y	CAPACITOR	0.01µF,16V
		C3042	QETJ0JM-477	E CAPACITOR	470µF,6.3V
		C3501	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C3502	QEKJ1CM-106	E CAPACITOR	10µF,16V
		C3503	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C3602	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C3652	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C4002	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C4003	NCB21HK-102X	CAPACITOR	0.001µF,50V
		C4004	NBE20JM-226X	T CAPACITOR	22µF,6.3V
		C4006	NBE40JM-476X	T CAPACITOR	47µF,6.3V
		C4007	NCB21HK-102X	CAPACITOR	0.001µF,50V
		C4008	NCB21AK-105X	CAPACITOR	1µF,10V
		C4009	NCB21HK-563X	CAPACITOR	0.056µF,50V
		C4010	NCB21EK-223X	CAPACITOR	0.022µF,25V
		C4011	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C4012	NCB21EK-224X	CAPACITOR	0.22µF,25V
		C4013	NCB21HK-563X	CAPACITOR	0.056µF,50V
		C4014	NDC21HJ-101X	CAPACITOR	100pF,50V
		C4015	NDC21HJ-331X	CAPACITOR	330pF,50V
		C4016	NDC21HJ-681X	CAPACITOR	680pF,50V
		C4017	NCB21HK-222X	CAPACITOR	0.0022µF,50V
	⚠	C5001	QFZ9073-683	F CAPACITOR	0.068µF,250V
	⚠	C5002	QFZ9051-333	F CAPACITOR	0.033µF,250V
	⚠	C5004	QCZ9071-222	CAPACITOR	0.0022µF,250V
		C5006	QEZ0375-686	E CAPACITOR	68µF,400V
		C5101	QCZ0212-472	CAPACITOR	0.0047µF,1kV
		C5102	QEMU1VM-276	E CAPACITOR	27µF,35V
		C5103	QCZ0302-330Z	CAPACITOR	33pF,1kV
		C5104	QFLC1HJ-471Z	F CAPACITOR	470pF,50V
		C5201	QEMU0JM-227	E CAPACITOR	220µF,6.3V
		C5202	QEMT1CM-827	E CAPACITOR	820µF,16V
		C5203	QEMT1AM-228	E CAPACITOR	2200µF,10V
		C5204	QETN2AM-475	E CAPACITOR	4.7µF,100V
		C5205	QETN1HM-106	E CAPACITOR	10µF,50V
		C5206	QEMU1EM-187	E CAPACITOR	180µF,25V
		C5207	QETN1CM-227	E CAPACITOR	220µF,16V
		C5208	QETN1AM-227	E CAPACITOR	220µF,10V
		C5212	QEMU1VM-127	E CAPACITOR	120µF,35V
		C5213	QEMU0JM-227	E CAPACITOR	220µF,6.3V
		C5301	QETM0JM-108	E CAPACITOR	1000µF,6.3V
		C5303	QETN1CM-107	E CAPACITOR	100µF,16V
		C5304	QFVF1HJ-274Z	F CAPACITOR	0.27µF,50V
		C5305	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C5306	QEKJ0JM-107	E CAPACITOR	100µF,6.3V
		C5307	QEKJ0JM-476	E CAPACITOR	47µF,6.3V
		C5308	QETN1CM-107	E CAPACITOR	100µF,16V
		C5309	QETN1CM-107	E CAPACITOR	100µF,16V
		C6006	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C6007	QEMU0JM-227	E CAPACITOR	220µF,6.3V
		C6008	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C6012	QEKJ1CM-107	E CAPACITOR	100µF,16V
		C6013	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C6014	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C6016	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C6023	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C6032	NCF21EZ-473X	CAPACITOR	0.047µF,25V
		C6033	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		C6037	NBE20JM-106X	T CAPACITOR	10µF,6.3V
		C6055	NDC21HJ-220X	CAPACITOR	22pF,50V
		C6555	NDC21HJ-1R0X	CAPACITOR	1pF,50V
		C7202	QETJ0JM-477	E CAPACITOR	470µF,6.3V
		C7251	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		L1	QQL29BJ-100Z	COIL	10µH
		L3	QQL29BJ-100Z	COIL	10µH
		L4	QQL29BJ-100Z	COIL	10µH
		L5	QQR0657-019Z	NOISE FILTER	
		L12	QQR0967-001	COIL	12µH
		L13	QQL071J-330Y	COIL	33µH
		L15	QQL29BJ-100Z	COIL	10µH
		L17	QQL071J-5R6Y	COIL	5.6µH
		L18	QQL071J-220Y	COIL	22µH
		L19	QQL071J-120Y	COIL	12µH
		L20	QQL071J-680Y	COIL	68µH
		L24	QQL071J-270Y	COIL	27µH
		L27	QQL071J-330Y	COIL	33µH
		L28	QQL071J-680Y	COIL	68µH
		L401	QQL071J-150Y	COIL	15µH
		L2251	QQL29BJ-100Z	COIL	10µH
		L2252	QQL29BJ-151Z	COIL	150µH

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		L2501	QQL29BJ-2R2Z	COIL	2.2µH
		L5201	PELN1184	COIL	33µH
		L5202	PU60944-330K	COIL	33µH
		L6002	QQL29BJ-100Z	COIL	10µH
		L6004	QQL29BJ-100Z	COIL	10µH
		L6005	QQL29BJ-100Z	COIL	10µH
		L6031	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		L7201	QQL01BJ-101Z	COIL	100µH
		LPF2501	PELN1137	LOW PASS FILTER	
		CF2501	QAX0399-001Z	RESONATOR	
		LC2501	QQL29BJ-100Z	COIL	10µH
		X1	QAX0576-001	CRYSTAL RESONATOR	
		X2	QCBB1HK-103	CAPACITOR	0.01µF,50V
		X3001	QAX0445-001	CRYSTAL RESONATOR	
		X3002	QAX0527-001	CRYSTAL RESONATOR	
		S3002	QSW0695-001	PUSH SWITCH,S CASS SW	
		K2251	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		K2252	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		K2253	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		K5101	QQR0678-001Z	FERRITE BEAD	
		K5102	QQR0678-001Z	FERRITE BEAD	
		K5201	QQR0678-001Z	FERRITE BEAD	
		PC3001	GP3S123	IC(PHOTO SENSOR)	
		PC3002	GP3S123	IC(PHOTO SENSOR)	
	⚠	PC5101	PC123F2	PH COUPLER	
		T2052	PELN0861	OSC TRANSFORMER	
	⚠	T5001	QQS0057-001	SW TRANSFORMER	
		TU6001	QAU0151-001	TUNER	
		ET1	PQ21623-1-5	EARTH PLATE(RF)	
		ET2	LP40658-001B	EARTH PLATE(1)	
		HS1	LP40621-001A	HEAT SINK,IC5101	
		HS2	LP40479-001B	HEAT SINK,IC5301	
		SD1	LP30720-001A	SHIELD CASE(PRE/REC)	
		OT1	QYTDSF3010Z	SCREW,X2	
		OT2	PU59915-107	#500SPACER0.007,WR1	
		OT3	PU59915-105	#500SPACER0.01,C45	
		OT4	PU59915-107	#500SPACER0.007,WR13-WR11	
		OT5	PU59915-107	#500SPACER0.007,WR14	
		OT6	QYTDST3008Z	SCREW,IC5101	
		OT7	QYTDST3006Z	SCREW,IC5301	
		WR1	QUB351-10ZAZA	SIN TWIST WIRE	
		WR13	QUB371-26A4ZA	SIN TWIST WIRE	
		WR14	QUB372-09A4ZA	SIN TWIST WIRE	
		WR101	QRE141J-0R0	RESISTOR,M/I	0Ω,1/4W
		FC5001	QNG0006-001Z	FUSE CLIP,F5001	
		FC5002	QNG0006-001Z	FUSE CLIP,F5001	
	⚠	LF5001	PELN1204-01-01	LINE FILTER	
	⚠	LF5002	QQR0608-001	LINE FILTER	
		CN1	QGF1028C1-13	FPC CONNECTOR,(4-16)U.DRUM	
		CN901	QGF1207C1-04	FPC CONNECTOR,(1-4)FRONT S IN	
		CN902	QGF1207C1-05	FPC CONNECTOR,(1-5)F_IN	
		CN903	QGB2024K1-12S	CONNECTOR,(1-12)TERMINAL	
		CN904	QGB2024K1-12S	CONNECTOR,(1-12)TERMINAL	
		CN905	QGB2024K1-05S	CONNECTOR,(1-5)TERMINAL	
		CN907	QGB2024K1-10S	CONNECTOR,(1-10)TERMINAL	
		CN2001	QGF1207C1-07	FPC CONNECTOR,(1-7)A/C HEAD	
		CN2002	QGB2532J1-02	CONNECTOR,(1-2)FE HEAD	
		CN2051	QGB2024K1-04S	CONNECTOR,(1-4)AUDIO ERASE	
		CN3001	QGF1207C1-05	FPC CONNECTOR,(1-5)DRUM MDA	
		CN3002	QGB2532J1-02	CONNECTOR,(1-2)LOADING MOTOR	
		CN3003	QGB2015M2-08	CONNECTOR,(1-8)CAPSTAN MOTOR	
		CN3004	QGB2534J2-04	CONNECTOR,(1-4)ROTARY ENCODER	
		CN3011	QGF1207C1-14	FPC CONNECTOR,(1-14)FRONT	
		CN3501	QGB2011L2-06	CONNECTOR,(1-6)DD MDA	
	⚠	CN5001	QGA7901C3-02	CONNECTOR,(1-2)AC IN	
	⚠	CP4001	ICP-N25	CIRCUIT PROTECTOR	
	⚠	CP5301	ICP-N38	CIRCUIT PROTECTOR	
	⚠	CP5302	ICP-N25	CIRCUIT PROTECTOR	
	⚠	F5001	QMF51E2-2R0J1	FUSE	T2.0A,AC250V

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3D DIGITAL/2M BOARD ASSEMBLY <05>

		PW1	LPA10105-01C	3D DIGITAL/2M BOARD ASSY
		IC1401	JCP8026	IC
		Q1401	2SC1317/RS/-T	TRANSISTOR
		Q1402	2SA1576A/QR/-X	TRANSISTOR
			or 2PA1576/R/-X	TRANSISTOR
		Q1403	2SA1576A/QR/-X	TRANSISTOR
			or 2PA1576/R/-X	TRANSISTOR
		Q1404	DTC144WU	TRANSISTOR
			or RN1309	TRANSISTOR
			or UN521E	TRANSISTOR
		Q1406	2SA1576A/QR/-X	TRANSISTOR
			or 2PA1576/R/-X	TRANSISTOR
		Q1407	2SA1576A/QR/-X	TRANSISTOR
			or 2PA1576/R/-X	TRANSISTOR
		Q1408	2SC4081/S/-X	TRANSISTOR
		Q1410	2SC4081/QRS/-X	TRANSISTOR
			or 2PC4081/R/-X	TRANSISTOR
		Q1412	2SC4081/QRS/-X	TRANSISTOR
			or 2PC4081/R/-X	TRANSISTOR
		Q1413	2SA1576A/QR/-X	TRANSISTOR
			or 2PA1576/R/-X	TRANSISTOR
		Q1414	DTC144WU	TRANSISTOR
			or UN521E	TRANSISTOR
			or RN1309	TRANSISTOR
		Q1417	2SC4081/QRS/-X	TRANSISTOR
			or 2PC4081/R/-X	TRANSISTOR
		Q1418	2SA1576A/QR/-X	TRANSISTOR
			or 2PA1576/R/-X	TRANSISTOR
		Q1419	DTC124TU	TRANSISTOR
		Q1420	2SC4081/QRS/-X	TRANSISTOR
			or 2PC4081/R/-X	TRANSISTOR
		D1401	RD4.3ES/B2/-T2	ZENER DIODE
			or MTZJ4.3B	ZENER DIODE
		D1402	1SS133	DIODE
			or 1N4148M	DIODE
		R1401	NRSA02J-181X	MG RESISTOR 180Ω,1/10W
		R1402	NRSA02J-101X	MG RESISTOR 100Ω,1/10W
		R1404	NRSA02J-182X	MG RESISTOR 1.8kΩ,1/10W
		R1406	NRSA02J-471X	MG RESISTOR 470Ω,1/10W
		R1407	NRSA02J-272X	MG RESISTOR 2.7kΩ,1/10W
		R1408	NRSA02J-122X	MG RESISTOR 1.2kΩ,1/10W
		R1410	NRSA02J-391X	MG RESISTOR 390Ω,1/10W
		R1411	NRSA02J-152X	MG RESISTOR 1.5kΩ,1/10W
		R1413	NRSA02J-331X	MG RESISTOR 330Ω,1/10W
		R1414	NRSA02J-821X	MG RESISTOR 820Ω,1/10W

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R1415	NRSA02J-221X	MG RESISTOR	220Ω,1/10W
R1416	NRSA02J-104X	MG RESISTOR	100kΩ,1/10W
R1417	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
R1418	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
R1421	NRSA02J-391X	MG RESISTOR	390Ω,1/10W
R1426	NRSA02J-561X	MG RESISTOR	560Ω,1/10W
R1427	NRSA02J-333X	MG RESISTOR	33kΩ,1/10W
R1428	NRSA02J-393X	MG RESISTOR	39kΩ,1/10W
R1429	NRSA02J-152X	MG RESISTOR	1.5kΩ,1/10W
R1430	NRSA02J-222X	MG RESISTOR	2.2kΩ,1/10W
R1431	NRSA02J-821X	MG RESISTOR	820Ω,1/10W
R1432	NRSA02J-182X	MG RESISTOR	1.8kΩ,1/10W
R1433	NRSA02J-510X	MG RESISTOR	51Ω,1/10W
R1434	NRSA02J-153X	MG RESISTOR	15kΩ,1/10W
R1435	NRSA02J-223X	MG RESISTOR	22kΩ,1/10W
R1436	NRSA02J-682X	MG RESISTOR	6.8kΩ,1/10W
R1437	NRSA02J-392X	MG RESISTOR	3.9kΩ,1/10W
R1438	NRSA02J-473X	MG RESISTOR	47kΩ,1/10W
R1439	NRSA02J-273X	MG RESISTOR	27kΩ,1/10W
R1440	NRSA02J-473X	MG RESISTOR	47kΩ,1/10W
R1441	NRSA02J-682X	MG RESISTOR	6.8kΩ,1/10W
R1442	NRSA02J-682X	MG RESISTOR	6.8kΩ,1/10W
R1446	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
R1447	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
R1448	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
R1449	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
R1450	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
R1452	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
R1453	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
R1454	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
R1455	NRSA02J-681X	MG RESISTOR	680Ω,1/10W
R1458	NRSA02J-681X	MG RESISTOR	680Ω,1/10W
R1459	NRSA02J-681X	MG RESISTOR	680Ω,1/10W
R1460	NRSA02J-273X	MG RESISTOR	27kΩ,1/10W
R1461	NRSA02J-121X	MG RESISTOR	120Ω,1/10W
R1463	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
VR1401	QVZ3521-103Z	V RESISTOR,D/A LEVEL ADJ	
C1401	QEKJ1CM-336	E CAPACITOR	33μF,16V
C1402	NCB21HK-103X	CAPACITOR	0.01μF,50V
C1403	QEKJ0JM-337	E CAPACITOR	330μF,6.3V
C1404	NCF21EZ-104X	CAPACITOR	0.1μF,25V
C1405	NCF21EZ-104X	CAPACITOR	0.1μF,25V
C1406	NCB21HK-103X	CAPACITOR	0.01μF,50V
C1407	NDC21HJ-680X	CAPACITOR	68pF,50V
C1408	NDC21HJ-330X	CAPACITOR	33pF,50V
C1410	QEKJ1EM-475	E CAPACITOR	4.7μF,25V
C1411	NCF21EZ-104X	CAPACITOR	0.1μF,25V
C1412	NDC21HJ-680X	CAPACITOR	68pF,50V
C1413	NDC21HJ-330X	CAPACITOR	33pF,50V
C1415	NCF21EZ-104X	CAPACITOR	0.1μF,25V
C1416	QEKJ1CM-106	E CAPACITOR	10μF,16V
C1417	NCF21EZ-104X	CAPACITOR	0.1μF,25V
C1421	NDC21HJ-330X	CAPACITOR	33pF,50V
C1422	NDC21HJ-680X	CAPACITOR	68pF,50V
C1423	NCF21EZ-104X	CAPACITOR	0.1μF,25V
C1424	NCB21HK-103X	CAPACITOR	0.01μF,50V
C1425	NCB21HK-103X	CAPACITOR	0.01μF,50V
C1426	NDC21HJ-390X	CAPACITOR	39pF,50V
C1428	NDC21HJ-220X	CAPACITOR	22pF,50V
C1429	QEKJ0JM-337	E CAPACITOR	330μF,6.3V
C1430	NCF21EZ-104X	CAPACITOR	0.1μF,25V

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C1432	NCF21CZ-105X	CAPACITOR	1μF,16V
C1433	NCF21EZ-104X	CAPACITOR	0.1μF,25V
C1435	NCF21EZ-104X	CAPACITOR	0.1μF,25V
C1436	NCF21EZ-104X	CAPACITOR	0.1μF,25V
C1437	NCF21EZ-104X	CAPACITOR	0.1μF,25V
C1438	NCF21EZ-104X	CAPACITOR	0.1μF,25V
C1439	NCF21CZ-105X	CAPACITOR	1μF,16V
C1440	NCF21EZ-104X	CAPACITOR	0.1μF,25V
C1441	NCF21EZ-104X	CAPACITOR	0.1μF,25V
C1442	NCF21CZ-105X	CAPACITOR	1μF,16V
C1444	NCF21EZ-104X	CAPACITOR	0.1μF,25V
C1445	NCF21EZ-104X	CAPACITOR	0.1μF,25V
C1446	QEKJ0JM-107	E CAPACITOR	100μF,6.3V
C1447	NCF21EZ-104X	CAPACITOR	0.1μF,25V
C1448	QEKJ0JM-337	E CAPACITOR	330μF,6.3V
C1449	NCF21EZ-104X	CAPACITOR	0.1μF,25V
C1450	NCF21EZ-104X	CAPACITOR	0.1μF,25V
C1451	QEKJ1EM-475	E CAPACITOR	4.7μF,25V
C1452	NCF21EZ-104X	CAPACITOR	0.1μF,25V
C1453	NCF21EZ-104X	CAPACITOR	0.1μF,25V
C1454	NCF21EZ-104X	CAPACITOR	0.1μF,25V
C1455	NCF21EZ-104X	CAPACITOR	0.1μF,25V
C1459	NDC21HJ-470X	CAPACITOR	47pF,50V
C1460	NDC21HJ-470X	CAPACITOR	47pF,50V
C1461	NDC21HJ-470X	CAPACITOR	47pF,50V
C1462	NDC21HJ-470X	CAPACITOR	47pF,50V
C1463	QEKJ0JM-336	E CAPACITOR	33μF,6.3V
C1465	NDC21HJ-470X	CAPACITOR	47pF,50V
C1466	NDC21HJ-470X	CAPACITOR	47pF,50V
C1467	NDC21HJ-470X	CAPACITOR	47pF,50V
C1468	NDC21HJ-101X	CAPACITOR	100pF,50V
C1470	NDC21HJ-330X	CAPACITOR	33pF,50V
C1471	NCF21EZ-104X	CAPACITOR	0.1μF,25V
C1472	NCF21EZ-104X	CAPACITOR	0.1μF,25V
C1473	NCF21EZ-104X	CAPACITOR	0.1μF,25V
L1401	QQL29BJ-100Z	COIL	10μH
L1402	QQL071J-6R8Y	COIL	6.8μH
L1403	QQL071J-6R8Y	COIL	6.8μH
L1404	QQL071J-6R8Y	COIL	6.8μH
L1405	QQL29BJ-100Z	COIL	10μH
L1406	QQL071J-330Y	COIL	33μH
L1407	QQL29BJ-100Z	COIL	10μH
L1409	QQL071J-1R0Y	COIL	1μH
LC1401	QQR0657-013Z	NOISE FILTER	
LC1402	QQR0657-010Z	NOISE FILTER	
SD1	LP30706-001B	SHIELD FRAME(S-VHS)	
SD2	LP30684-001A	SHIELD CASE(S-VHS)	
CN1401	QGG2502K1-17	HEADER PIN,(1-7)MAIN	

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TERMINAL BOARD ASSEMBLY <06>

PW1	LPA10100-04A	TERMINAL BOARD ASSY
IC201	LC74776-9791	IC
IC901	BH7636S	IC
Q207	2SB1218A/QR/-X	TRANSISTOR
	or 2PA1576/R/-X	TRANSISTOR
	or 2SA1576A/QR/-X	TRANSISTOR

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		Q901	UN5211	TRANSISTOR	
			or PDTC114EU	TRANSISTOR	
			or RN1302	TRANSISTOR	
			or DTC114EU	TRANSISTOR	
		Q902	2SB1218A/QR/-X	TRANSISTOR	
			or 2SA1576A/QR/-X	TRANSISTOR	
			or 2PA1576/R/-X	TRANSISTOR	
		Q903	2SB1218A/QR/-X	TRANSISTOR	
			or 2PA1576/R/-X	TRANSISTOR	
			or 2SA1576A/QR/-X	TRANSISTOR	
		Q904	2SB1218A/QR/-X	TRANSISTOR	
			or 2SA1576A/QR/-X	TRANSISTOR	
			or 2PA1576/R/-X	TRANSISTOR	
		Q905	2SD1819A/QRS/-X	TRANSISTOR	
			or 2PC4081/R/-X	TRANSISTOR	
			or 2SC4081/QRS/-X	TRANSISTOR	
		Q906	2SD1819A/QRS/-X	TRANSISTOR	
			or 2SC4081/QRS/-X	TRANSISTOR	
			or 2PC4081/R/-X	TRANSISTOR	
		Q907	2SD1819A/QRS/-X	TRANSISTOR	
			or 2PC4081/R/-X	TRANSISTOR	
			or 2SC4081/QRS/-X	TRANSISTOR	
		Q908	2SB1218A/QR/-X	TRANSISTOR	
			or 2SA1576A/QR/-X	TRANSISTOR	
			or 2PA1576/R/-X	TRANSISTOR	
		Q909	2SB1218A/QR/-X	TRANSISTOR	
			or 2PA1576/R/-X	TRANSISTOR	
			or 2SA1576A/QR/-X	TRANSISTOR	
		Q911	UN521E	TRANSISTOR	
			or PDTC144WU	TRANSISTOR	
			or DTC144WU	TRANSISTOR	
			or RN1309	TRANSISTOR	
		Q912	UN5215	TRANSISTOR	
			or PDTC114TU	TRANSISTOR	
			or RN1311	TRANSISTOR	
			or DTC114TU	TRANSISTOR	
		D201	QRE141J-152Y	RESISTOR	1.5kΩ,1/4W
		D205	1SS133	DIODE	
		R202	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R208	NRSA02J-222X	MG RESISTOR	2.2kΩ,1/10W
		R209	NRSA02J-682X	MG RESISTOR	6.8kΩ,1/10W
		R210	NRSA02J-182X	MG RESISTOR	1.8kΩ,1/10W
		R211	NRSA02J-562X	MG RESISTOR	5.6kΩ,1/10W
		R212	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R213	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R214	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R216	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R218	NRSA02J-331X	MG RESISTOR	330Ω,1/10W
		R901	NRSA02J-750X	MG RESISTOR	75Ω,1/10W
		R902	NRSA02J-750X	MG RESISTOR	75Ω,1/10W
		R903	NRSA02J-680X	MG RESISTOR	68Ω,1/10W
		R904	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R905	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R906	NQL402M-100X	COIL	10µH
		R907	NQL402M-100X	COIL	10µH
		R908	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R909	NRSA02J-750X	MG RESISTOR	75Ω,1/10W
		R910	NRSA02J-750X	MG RESISTOR	75Ω,1/10W
		R911	NRSA02J-750X	MG RESISTOR	75Ω,1/10W
		R912	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R913	NRSA02J-101X	MG RESISTOR	100Ω,1/10W

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		R914	NQL402M-100X	COIL	10µH
		R915	NQL402M-100X	COIL	10µH
		R916	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R917	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R918	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R919	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R920	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R921	QRE123J-391X	RESISTOR	390Ω,1/2W
		R922	QRE123J-391X	RESISTOR	390Ω,1/2W
		R923	NRSA02J-750X	MG RESISTOR	75Ω,1/10W
		R924	NRSA02J-750X	MG RESISTOR	75Ω,1/10W
		R931	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R932	NRSA02J-511X	MG RESISTOR	510Ω,1/10W
		R933	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R934	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R935	QRE141J-101Y	RESISTOR	100Ω,1/4W
		R936	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R937	QRE141J-101Y	RESISTOR	100Ω,1/4W
		R938	QRE141J-101Y	RESISTOR	100Ω,1/4W
		R939	QRE141J-101Y	RESISTOR	100Ω,1/4W
		R940	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R941	NRSA02J-332X	MG RESISTOR	3.3kΩ,1/10W
		R942	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R943	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R944	NRSA02J-272X	MG RESISTOR	2.7kΩ,1/10W
		R945	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R946	NRSA02J-561X	MG RESISTOR	560Ω,1/10W
		R947	NRSA02J-682X	MG RESISTOR	6.8kΩ,1/10W
		R949	QRE123J-331X	RESISTOR	330Ω,1/2W
		R951	NRSA02J-332X	MG RESISTOR	3.3kΩ,1/10W
		R952	NRSA02J-562X	MG RESISTOR	5.6kΩ,1/10W
		R953	NRSA02J-562X	MG RESISTOR	5.6kΩ,1/10W
		R964	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R965	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		C201	QEKJ0JM-227	E CAPACITOR	220µF,6.3V
		C204	NDC21HJ-100X	CAPACITOR	10pF,50V
		C206	NDC21HJ-330X	CAPACITOR	33pF,50V
		C207	NDC21HJ-330X	CAPACITOR	33pF,50V
		C209	NCB21CK-474X	CAPACITOR	0.47µF,16V
		C210	NDC21HJ-101X	CAPACITOR	100pF,50V
		C211	NDC21HJ-101X	CAPACITOR	100pF,50V
		C212	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C213	QEKJ1EM-475	E CAPACITOR	4.7µF,25V
		C214	NCB21CK-224X	CAPACITOR	0.22µF,16V
		C215	NCB21CK-224X	CAPACITOR	0.22µF,16V
		C216	QEKJ0JM-227	E CAPACITOR	220µF,6.3V
		C217	NDC21HJ-560X	CAPACITOR	56pF,50V
		C218	NCB21AK-105X	CAPACITOR	1µF,10V
		C222	NCB21AK-105X	CAPACITOR	1µF,10V
		C225	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C901	NCB21HK-331X	CAPACITOR	330pF,50V
		C902	NCB21HK-331X	CAPACITOR	330pF,50V
		C903	NCB21HK-471X	CAPACITOR	470pF,50V
		C904	NCB21HK-471X	CAPACITOR	470pF,50V
		C905	NCB21HK-331X	CAPACITOR	330pF,50V
		C906	NCB21HK-331X	CAPACITOR	330pF,50V
		C907	NCB21HK-471X	CAPACITOR	470pF,50V
		C908	NCB21HK-471X	CAPACITOR	470pF,50V
		C910	NCB21HK-102X	CAPACITOR	0.001µF,50V
		C912	NCB21HK-102X	CAPACITOR	0.001µF,50V
		C913	NCB21HK-103X	CAPACITOR	0.01µF,50V

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		C914	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C915	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C916	NCB21HK-223X	CAPACITOR	0.022µF,50V
		C917	NCB21HK-223X	CAPACITOR	0.022µF,50V
		C918	NCB21HK-223X	CAPACITOR	0.022µF,50V
		C921	NDC21HJ-330X	CAPACITOR	33pF,50V
		C923	QEKJ1CM-476	E CAPACITOR	47µF,16V
		C924	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C925	NCB21HK-223X	CAPACITOR	0.022µF,50V
		C927	QEKJ1CM-476	E CAPACITOR	47µF,16V
		C930	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C931	QEKJ1CM-476	E CAPACITOR	47µF,16V
		C933	NCB21HK-331X	CAPACITOR	330pF,50V
		C934	NCB21HK-331X	CAPACITOR	330pF,50V
		C935	NCB21HK-471X	CAPACITOR	470pF,50V
		C936	NCB21HK-471X	CAPACITOR	470pF,50V
		C937	NCB21HK-331X	CAPACITOR	330pF,50V
		C938	NCB21HK-331X	CAPACITOR	330pF,50V
		C939	NCB21HK-471X	CAPACITOR	470pF,50V
		C940	NCB21HK-471X	CAPACITOR	470pF,50V
		C941	QETJ0JM-477	E CAPACITOR	470µF,6.3V
		C942	QEKJ1CM-476	E CAPACITOR	47µF,16V
		C943	QEKJ1CM-476	E CAPACITOR	47µF,16V
		C945	QEKJ1CM-106	E CAPACITOR	10µF,16V
		C946	QEKJ1CM-106	E CAPACITOR	10µF,16V
		C947	QETJ0JM-477	E CAPACITOR	470µF,6.3V
		C951	QEKC1CM-476	E CAPACITOR	47µF,16V
		L201	QQL29BK-1R0Z	COIL	1µH
		L202	QQL071J-330Y	COIL	33µH
		L203	QQL071J-220Y	COIL	22µH
		L204	QQL29BJ-100Z	COIL	10µH
		L206	QQL071J-220Y	COIL	22µH
		L901	QQL231J-R22Y	COIL	0.22µH
		L902	QQL071J-1R0Y	COIL	1µH
		L903	QQL071J-150Y	COIL	15µH
		L904	QQL071J-150Y	COIL	15µH
		L910	QQL071J-1R0Y	COIL	1µH
		L913	QQL071J-4R7Y	COIL	4.7µH
		L914	QQL071J-4R7Y	COIL	4.7µH
		L915	QQL071J-4R7Y	COIL	4.7µH
		L916	QQL071J-4R7Y	COIL	4.7µH
		L917	QQL071J-4R7Y	COIL	4.7µH
		L918	QQL071J-4R7Y	COIL	4.7µH
		L919	QQL071J-4R7Y	COIL	4.7µH
		L920	QQL071J-4R7Y	COIL	4.7µH
		ET1	PQ21987-1-1	EATH PLATE(TERMINAL)	
	⚠	TB1	LP30712-008B	TERMINAL BOARD ASSY	
		OT1	QYTDSF3008Z	SCREW,X8	
		J901	PEMC1177	RGB21PIN SOCKET,AV1 IN/OUT	
		J902	PEMC1177	RGB21PIN SOCKET,AV2/DECODER	
		J903	QND0085-001	S JACK,S OUT	
		J912	QNN0021-003	PIN JACK,A.OUT(L)	
		J913	QNN0021-002	PIN JACK,A.OUT(R)	
		J923	PEMC1190	MINI JACK,JLIP	
		J924	QNS0150-001	2.5 JACK,LANC	
		J925	PU60659	MINI JACK,SAT.CTL	
		J926	PU60659	MINI JACK,PAUSE/RAE	
		WR901	QUB320-07ZAZA	SIN TWIST WIRE	
		CN911	QGF1208F1-14	FPC CONNECTOR,(1-14)S-SUB	
		CN912	QGF1208F1-08	FPC CONNECTOR,(1-8)NAVIGATION	
		CN913	QGB2024J1-12S	CONNECTOR,(1-12)MAIN	
		CN914	QGB2024J1-12S	CONNECTOR,(1-12)MAIN	
		CN915	QGB2024J1-05S	CONNECTOR,(1-5)MAIN	
		CN917	QGB2024J1-10S	CONNECTOR,(1-10)MAIN	

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AUDIO CONTROL HEAD BOARD ASSEMBLY <12>

	PW1	LPA10010-01A1	A/C HEAD BOARD ASSY
	CN1	QGF1208F1-07	FPC CONNECTOR

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DEMOD BOARD ASSEMBLY <14>

	PW1	LPA10094-01C	DEMOD BOARD ASSY	
	IC6701	MSP34VCDT	IC	
		or MSP3417D	IC	
	Q6701	2SC3936/BC/-X	TRANSISTOR	
	D6701	1SS133	DIODE	
		or 1N4148M	DIODE	
	R6701	NRSA02J-392X	MG RESISTOR	3.9kΩ,1/10W
	R6702	NRSA02J-682X	MG RESISTOR	6.8kΩ,1/10W
	R6703	NRSA02J-470X	MG RESISTOR	47Ω,1/10W
	R6704	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
	R6705	NRSA02J-271X	MG RESISTOR	270Ω,1/10W
	R6706	NRSA02J-151X	MG RESISTOR	150Ω,1/10W
	R6707	NRSA02J-220X	MG RESISTOR	22Ω,1/10W
	R6708	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
	R6709	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
	R6710	NRSA02J-100X	MG RESISTOR	10Ω,1/10W
	R6711	NRSA02J-684X	MG RESISTOR	680kΩ,1/10W
	R6712	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
	R6714	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
	R6716	NRSA02J-470X	MG RESISTOR	47Ω,1/10W
	R6719	QRE141J-103Y	RESISTOR	10kΩ,1/4W
	R6720	NRSA02J-562X	MG RESISTOR	5.6kΩ,1/10W
	R6721	NRSA02J-562X	MG RESISTOR	5.6kΩ,1/10W
	C6701	NCB21HK-103X	CAPACITOR	0.01µF,50V
	C6702	NCB21HK-222X	CAPACITOR	0.0022µF,50V
	C6704	NCB21HK-103X	CAPACITOR	0.01µF,50V
	C6705	NCB21HK-102X	CAPACITOR	0.001µF,50V
	C6707	NDC21HJ-470X	CAPACITOR	47pF,50V
	C6708	NDC21HJ-8R0X	CAPACITOR	8pF,50V
	C6709	NDC21HJ-1R0X	CAPACITOR	1pF,50V
	C6713	NCF21CZ-224X	CAPACITOR	0.22µF,16V
	C6714	NCB21HK-682X	CAPACITOR	0.0068µF,50V
	C6715	QEKJ1HM-225	E CAPACITOR	2.2µF,50V
	C6716	NCB21HK-682X	CAPACITOR	0.0068µF,50V
	C6717	QEKJ1HM-225	E CAPACITOR	2.2µF,50V
	C6719	QEKJ1CM-106	E CAPACITOR	10µF,16V
	C6720	QEKJ1CM-106	E CAPACITOR	10µF,16V
	C6721	NCB21HK-103X	CAPACITOR	0.01µF,50V
	C6723	NCB21HK-103X	CAPACITOR	0.01µF,50V
	C6724	QEKJ1HM-225	E CAPACITOR	2.2µF,50V
	L6701	QQL231J-1R0Y	COIL	1µH
	L6702	QQL231J-3R3Y	COIL	3.3µH

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		X6701	QAX0443-001	CRYSTAL RESONATOR	
		K6701	NQR0200-003X	FERRITE BEAD	
		K6702	NQR0200-003X	FERRITE BEAD	
		K6703	NQR0200-003X	FERRITE BEAD	
		K6704	NQR0200-003X	FERRITE BEAD	
		K6705	NQR0200-003X	FERRITE BEAD	
		K6706	NQR0200-003X	FERRITE BEAD	
		K6707	NQR0200-003X	FERRITE BEAD	
		BK1	LP40077-001A	BRACKET(BOARD)	
		CN6701	QGG2502K1-10	HEADER PIN	

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S-SUB BOARD ASSEMBLY <15>

PW1	LPA10103-01A	S-SUB BOARD ASSY	
IC501	JCP8018	IC	
	or JCP8028-01	IC	
	or JCP8038	IC	
	or JCP8028	IC	
IC502	VC2076DP	IC	
R503	NRSA02J-221X	MG RESISTOR	220Ω,1/10W
R504	NRSA02J-332X	MG RESISTOR	3.3kΩ,1/10W
R505	NRSA02J-392X	MG RESISTOR	3.9kΩ,1/10W
R506	NRSA02J-391X	MG RESISTOR	390Ω,1/10W
R507	NRSA02J-122X	MG RESISTOR	1.2kΩ,1/10W
R508	NRSA02J-151X	MG RESISTOR	150Ω,1/10W
R509	NRSA02J-162X	MG RESISTOR	1.6kΩ,1/10W
R510	NRVA02D-102X	CMF RESISTOR	1kΩ,1/10W
R511	NRVA02D-471X	CMF RESISTOR	470Ω,1/10W
R512	NRVA02D-102X	CMF RESISTOR	1kΩ,1/10W
R513	NRVA02D-152X	CMF RESISTOR	1.5kΩ,1/10W
R514	NRVA02D-332X	CMF RESISTOR	3.3kΩ,1/10W
R515	NRVA02D-332X	CMF RESISTOR	3.3kΩ,1/10W
R516	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R517	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
R525	NRSA02J-125X	MG RESISTOR	1.2MΩ,1/10W
R527	NRSA02J-332X	MG RESISTOR	3.3kΩ,1/10W
R531	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
R532	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
R533	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
R534	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
R535	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
R536	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
C501	QEKJ1HM-225	E CAPACITOR	2.2µF,50V
C502	QEKJ1EM-475	E CAPACITOR	4.7µF,25V
C503	QEKJ1HM-225	E CAPACITOR	2.2µF,50V
C504	NCB21EK-104X	CAPACITOR	0.1µF,25V
C505	QEKJ1EM-475	E CAPACITOR	4.7µF,25V
C506	NCB21EK-104X	CAPACITOR	0.1µF,25V
C507	QEKJ0JM-227	E CAPACITOR	220µF,6.3V
C508	QEPF1HM-474	NP E CAPACITOR	0.47µF,50V
C509	QEKJ1CM-106	E CAPACITOR	10µF,16V
C510	QEKJ0JM-227	E CAPACITOR	220µF,6.3V
C511	NCB21HK-103X	CAPACITOR	0.01µF,50V
C512	NCB21HK-103X	CAPACITOR	0.01µF,50V
C513	QEKJ1EM-475	E CAPACITOR	4.7µF,25V
C514	NCB21HK-103X	CAPACITOR	0.01µF,50V
C515	NCB21HK-103X	CAPACITOR	0.01µF,50V
C516	NCB21HK-103X	CAPACITOR	0.01µF,50V
C517	NCF21EZ-104X	CAPACITOR	0.1µF,25V
C518	NCB21EK-104X	CAPACITOR	0.1µF,25V
C519	QEKJ1HM-225	E CAPACITOR	2.2µF,50V
C520	QERF1EM-475	E CAPACITOR	4.7µF,25V
C521	QEKJ1EM-475	E CAPACITOR	4.7µF,25V
C522	QEKJ1HM-225	E CAPACITOR	2.2µF,50V
C523	QEKJ1HM-225	E CAPACITOR	2.2µF,50V
C524	NDC21HG-301X	CAPACITOR	300pF,50V
C525	NDC21HG-301X	CAPACITOR	300pF,50V
C526	NDC21HJ-101X	CAPACITOR	100pF,50V
C527	NDC21HJ-181X	CAPACITOR	180pF,50V
C528	NDC21HG-271X	CAPACITOR	270pF,50V
C529	NDC21HG-820X	CAPACITOR	82pF,50V
C530	NDC21HG-221X	CAPACITOR	220pF,50V
C531	NDC21HG-301X	CAPACITOR	300pF,50V
C532	NDC21HG-301X	CAPACITOR	300pF,50V
C533	NCB21HK-103X	CAPACITOR	0.01µF,50V
C534	QETJ0JM-477	E CAPACITOR	470µF,6.3V
C535	NCB21HK-103X	CAPACITOR	0.01µF,50V
C551	QEKJ1HM-105	E CAPACITOR	1µF,50V
C552	NCB21HK-103X	CAPACITOR	0.01µF,50V
C553	NCB21HK-103X	CAPACITOR	0.01µF,50V
C554	QEKJ1HM-105	E CAPACITOR	1µF,50V
C555	NCB21HK-103X	CAPACITOR	0.01µF,50V
C556	NCB21HK-103X	CAPACITOR	0.01µF,50V
C557	QEKJ1HM-105	E CAPACITOR	1µF,50V
C558	NCB21HK-103X	CAPACITOR	0.01µF,50V
C559	NCB21HK-103X	CAPACITOR	0.01µF,50V
C560	QEKJ1HM-105	E CAPACITOR	1µF,50V
C561	QEKJ1HM-105	E CAPACITOR	1µF,50V
C563	NCB21HK-103X	CAPACITOR	0.01µF,50V
C568	NDC21HJ-680X	CAPACITOR	68pF,50V
C569	NDC21HJ-680X	CAPACITOR	68pF,50V
C570	NDC21HJ-680X	CAPACITOR	68pF,50V
C571	NDC21HJ-680X	CAPACITOR	68pF,50V
C572	NDC21HJ-680X	CAPACITOR	68pF,50V
C573	NDC21HJ-680X	CAPACITOR	68pF,50V
L501	QQL29BJ-100Z	COIL	10µH
L503	QQL29BJ-100Z	COIL	10µH
L504	QQL29BJ-100Z	COIL	10µH
BK1	LP40077-001A	BRACKET(BOARD)	
CN511	QGG2503K2-30	HEADER PIN,(1-30)MAIN	
CN512	QGF1209F2-14	FFC/FPC CONNECTOR,(1-14)TERMINAL	

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NAVIGATION BOARD ASSEMBLY <19> [LPB10108-001*]

There are currently two types of Navigation boards in used, these are the LPB10108-001* and the LPB10108-002*.
These two boards have different Schematic Diagrams and Parts Lists. Be sure to check the board number before selecting its corresponding Schematic Diagram and Parts List.

PW1	LPA10108-01B	NAVIGATION BOARD ASSY
IC3301	MN101C12GCG	IC(MCU)
	or MN101C49HCG	IC(MCU)
	or MN101CP12GAFCG	IC(MCU)

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
			or MN101CP49KAFCG	IC(MCU)	
		IC3401	74HC4053D	IC	
		IC3402	74HC4053D	IC	
		IC3403	AT45D011-SC-X	IC	
		IC3405	TC7W241FU	IC(DIGITAL)	
		IC3406	TC7W241FU	IC(DIGITAL)	
		D3401	RB751V-40-X	SB DIODE	
		D3402	RB751V-40-X	SB DIODE	
		D3407	1SS355	DIODE	
		R3302	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3313	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3321	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3322	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3323	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3326	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3328	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3329	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3330	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3331	NRSA02J-223X	MG RESISTOR	22kΩ,1/10W
		R3332	NRSA02J-223X	MG RESISTOR	22kΩ,1/10W
		R3333	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3339	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3340	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3342	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3343	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3345	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3346	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3347	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3348	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3349	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3350	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3351	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3352	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3371	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3372	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3373	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3386	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3401	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3402	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3403	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3404	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3412	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3414	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3415	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3422	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3432	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3452	NRSA02J-223X	MG RESISTOR	22kΩ,1/10W
		R3462	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3463	NRSA02J-223X	MG RESISTOR	22kΩ,1/10W
		R3464	NRSA02J-223X	MG RESISTOR	22kΩ,1/10W
		R3465	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3466	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3468	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3472	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3475	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		C3312	NDC21HJ-120X	CAPACITOR	12pF,50V
		C3313	NDC21HJ-120X	CAPACITOR	12pF,50V
		C3314	NCB21EK-104X	CAPACITOR	0.1μF,25V
		C3321	NDC21HJ-220X	CAPACITOR	22pF,50V
		C3322	NDC21HJ-220X	CAPACITOR	22pF,50V
		C3323	NDC21HJ-220X	CAPACITOR	22pF,50V
		C3333	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		C3345	NDC21HJ-220X	CAPACITOR	22pF,50V
		C3346	NDC21HJ-220X	CAPACITOR	22pF,50V
		C3347	NDC21HJ-220X	CAPACITOR	22pF,50V
		C3401	QEKJ0JM-226	E CAPACITOR	22μF,6.3V
		C3402	NCB21EK-104X	CAPACITOR	0.1μF,25V
		C3403	NCB21EK-104X	CAPACITOR	0.1μF,25V
		C3404	NCB21EK-104X	CAPACITOR	0.1μF,25V
		C3405	NCB21EK-104X	CAPACITOR	0.1μF,25V
		C3414	NCB21EK-104X	CAPACITOR	0.1μF,25V
		X3301	QAX0584-001	CRYSTAL RESONATOR	
		BK1	LP40425-001A	BRACKET(BOARD)	
		CN3401	QGG2502K1-13	HEADER PIN,(1-13)	
		CN3402	QGF1207F1-08	FPC CONNECTOR,(1-8)TERMINAL	

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NAVIGATION BOARD ASSEMBLY <19> [LPB10108-002*]

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		PW1	LPA10108-11A	NAVIGATION BOARD ASSY	
		IC3301	MN101C12GCG	IC	
			or MN101C49HCG	IC	
			or MN101CP12GAFCG	IC	
			or MN101CP49KAFCG	IC	
		IC3401	74HC4053D	IC	
		IC3402	74HC4053D	IC	
		IC3403	AT45DB011-SC-X	IC	
		IC3405	TC7W241FU	IC(DIGITAL)	
		IC3406	TC7W241FU	IC(DIGITAL)	
		IC3408	SN74LV08APW	IC	
		IC3409	TC7WT125FU	IC(DIGITAL)	
		Q3403	2SD1450/ST/-T	TRANSISTOR	
		D3401	RB751V-40-X	SB DIODE	
		D3402	RB751V-40-X	SB DIODE	
		D3407	1SS355	DIODE	
		D3408	RD3.6ES/B2/-T2	ZENER DIODE	
			or MTZJ3.6B	ZENER DIODE	
		R3302	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3313	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3321	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3322	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3323	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3326	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3328	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3329	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3330	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3331	NRSA02J-223X	MG RESISTOR	22kΩ,1/10W
		R3332	NRSA02J-223X	MG RESISTOR	22kΩ,1/10W
		R3333	NRSA02J-331X	MG RESISTOR	330Ω,1/10W
		R3339	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3340	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3342	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3343	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3345	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3346	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3347	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3348	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3349	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3350	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		R3351	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3352	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3371	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3372	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3373	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3386	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3401	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3402	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3403	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3404	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3412	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3414	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3415	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3422	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3432	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3462	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3465	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3466	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3468	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3472	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3475	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3476	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R3477	NRSA02J-271X	MG RESISTOR	270Ω,1/10W
		C3312	NDC21HJ-120X	CAPACITOR	12pF,50V
		C3313	NDC21HJ-120X	CAPACITOR	12pF,50V
		C3314	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C3321	NDC21HJ-220X	CAPACITOR	22pF,50V
		C3322	NDC21HJ-220X	CAPACITOR	22pF,50V
		C3323	NDC21HJ-220X	CAPACITOR	22pF,50V
		C3333	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		C3345	NDC21HJ-220X	CAPACITOR	22pF,50V
		C3346	NDC21HJ-220X	CAPACITOR	22pF,50V
		C3347	NDC21HJ-220X	CAPACITOR	22pF,50V
		C3401	QEKJ0JM-226	E CAPACITOR	22µF,6.3V
		C3402	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C3403	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C3404	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C3405	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C3414	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C3416	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C3417	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C3419	NCB21HK-103X	CAPACITOR	0.01µF,50V
		X3301	QAX0584-001	CRYSTAL RESONATOR	
		BK1	LP40425-001A	BRACKET(BOARD)	
		CN3401	QGG2502K1-13	HEADER PIN,(1-13)MAIN	
		CN3402	QGF1207F1-08	FPC CONNECTOR,(1-8)TERMINAL	

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DISPLAY BOARD ASSEMBLY <28>

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		PW1	LPA10067-02A1	DISPLAY BOARD ASSY	
		IC7001	M35500BGP	IC	
			or M35500AGP	IC	
			or M35500BFP	IC	
		IC7002	PNA4652M00XB	IR DETECT UNIT	
			or GP1U281X	IR DETECT UNIT	
		Q7001	DTC144WS	TRANSISTOR	
		Q7002	2SC1740S/QRS/-T	TRANSISTOR	
			or 2SC3199/YG/-T	TRANSISTOR	
		Q7003	2SA933AS/QRS/-T	TRANSISTOR	
			or 2SA1267/YG/-T	TRANSISTOR	
		D7002	RD9.1ES/B2/-T2	ZENER DIODE	
			or UZ9.1BSB	ZENER DIODE	
			or MTZJ9.1B	ZENER DIODE	
		D7004	1SS133	DIODE	
		D7005	1SS133	DIODE	
		D7006	1SS133	DIODE	
		D7007	1SS133	DIODE	
		D7012	1SS133	DIODE	
		D7013	1SS133	DIODE	
		D7014	1SS133	DIODE	
		R7001	QRE141J-471Y	RESISTOR	470Ω,1/4W
		R7002	QRE141J-471Y	RESISTOR	470Ω,1/4W
		R7003	QRE141J-471Y	RESISTOR	470Ω,1/4W
		R7004	QRE141J-471Y	RESISTOR	470Ω,1/4W
		R7005	QRE141J-103Y	RESISTOR	10kΩ,1/4W
		R7006	QRE141J-103Y	RESISTOR	10kΩ,1/4W
		R7007	QRE141J-103Y	RESISTOR	10kΩ,1/4W
		R7008	QRE141J-103Y	RESISTOR	10kΩ,1/4W
		R7013	QRE141J-103Y	RESISTOR	10kΩ,1/4W
		R7020	QRE141J-103Y	RESISTOR	10kΩ,1/4W
		R7021	QRE141J-122Y	RESISTOR	1.2kΩ,1/4W
		R7022	QRE141J-182Y	RESISTOR	1.8kΩ,1/4W
		R7023	QRE141J-222Y	RESISTOR	2.2kΩ,1/4W
		R7024	QRE141J-272Y	RESISTOR	2.7kΩ,1/4W
		R7025	QRE141J-472Y	RESISTOR	4.7kΩ,1/4W
		R7026	QRE141J-682Y	RESISTOR	6.8kΩ,1/4W
		R7027	QRE141J-153Y	RESISTOR	15kΩ,1/4W
		R7028	QRE141J-393Y	RESISTOR	39kΩ,1/4W
		R7030	QRE141J-103Y	RESISTOR	10kΩ,1/4W
		R7031	QRE141J-122Y	RESISTOR	1.2kΩ,1/4W
		R7032	QRE141J-182Y	RESISTOR	1.8kΩ,1/4W
		R7033	QRE141J-222Y	RESISTOR	2.2kΩ,1/4W
		R7034	QRE141J-272Y	RESISTOR	2.7kΩ,1/4W
		R7035	QRE141J-472Y	RESISTOR	4.7kΩ,1/4W
		R7036	QRE141J-682Y	RESISTOR	6.8kΩ,1/4W
		R7037	QRE141J-153Y	RESISTOR	15kΩ,1/4W
		R7038	QRE141J-393Y	RESISTOR	39kΩ,1/4W
		R7040	QRE141J-331Y	RESISTOR	330Ω,1/4W
		R7041	QRE141J-331Y	RESISTOR	330Ω,1/4W
		R7042	QRE141J-331Y	RESISTOR	330Ω,1/4W
		R7044	QRE141J-104Y	RESISTOR	100kΩ,1/4W
		R7045	QRE141J-102Y	RESISTOR	1kΩ,1/4W
		R7046	QRE141J-394Y	RESISTOR	390kΩ,1/4W
		R7047	QRE141J-101Y	RESISTOR	100Ω,1/4W
		R7048	QRE141J-472Y	RESISTOR	4.7kΩ,1/4W
		C7001	QCFB1HZ-104	CAPACITOR	0.1µF,50V
		C7002	QETN1HM-106	E CAPACITOR	10µF,50V
		C7007	QETN1HM-476	E CAPACITOR	47µF,50V
		C7009	QCSB1HJ-150	CAPACITOR	15pF,50V
		C7010	QCFB1HZ-104	CAPACITOR	0.1µF,50V
		C7011	QETN1AM-227	E CAPACITOR	220µF,10V
		C7019	QDVB1EZ-223Y	CAPACITOR	0.022µF,25V
		C7022	QDVB1EZ-223Y	CAPACITOR	0.022µF,25V
		C7192	QCBB1HJ-681	CAPACITOR	680pF,50V
		C7194	QCBB1HJ-681	CAPACITOR	680pF,50V
		C7197	QCBB1HK-221	CAPACITOR	220pF,50V
		L7191	QRE141J-101Y	RESISTOR	100Ω,1/4W
		L7192	QRE141J-101Y	RESISTOR	100Ω,1/4W

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		L7196	QQL071J-1R0Y	COIL	1µH
		S7001	QSW0456-002Z	TACT SWITCH,STAND-BY	
		S7002	QSW0456-002Z	TACT SWITCH,A.MONITOR	
		S7003	QSW0456-002Z	TACT SWITCH,C.RESET	
		S7004	QSW0456-002Z	TACT SWITCH,IN/OUT	
		S7005	QSW0456-002Z	TACT SWITCH,RAE	
		S7006	QSW0456-002Z	TACT SWITCH,START	
		S7007	QSW0456-002Z	TACT SWITCH,STOP/EJECT	
		S7008	QSW0456-002Z	TACT SWITCH,MARK	
		S7009	QSW0456-002Z	TACT SWITCH,ERASE	
		S7010	QSW0456-002Z	TACT SWITCH,D.TBC/NR	
		S7011	QSW0456-002Z	TACT SWITCH,SP/LP/EP	
		S7012	QSW0456-002Z	TACT SWITCH,TIMER	
		S7013	QSW0456-002Z	TACT SWITCH,SAT.CTL	
		S7014	QSW0456-002Z	TACT SWITCH,VCR/TV	
		S7015	QSW0456-002Z	TACT SWITCH,SYN.EDIT	
		S7016	QSW0456-002Z	TACT SWITCH,SVHS ET	
		S7017	QSW0456-002Z	TACT SWITCH,DISPLAY	
		DI7001	QLF0032-002	FL TUBE	
		HD1	LP30428-001A	FDP HOLDER(L),DI7001	
		HD2	LP30429-001A	FDP HOLDER(R),DI7001	
		OT1	PU59915-105	#500SPACER0.01,C7197	
		J7191	PEMC1126-04	PIN JACK,VIDEO IN	
		J7192	PEMC0922-03	PIN JACK(SW),A(L)IN	
		J7193	PEMC0922-02	PIN JACK(SW),A(R)IN	
		J7194	QND0085-001	S JACK,S VIDEO	
		CN7001	QGF1207C1-14	FPC CONNECTOR,(1-14)MAIN	
		CN7002	QGF1202C1-08	FPC CONNECTOR,(1-8)M.DOOR	
		CN7191	QGF1207C1-05	FPC CONNECTOR,(3-7)MAIN	
		CN7192	QGF1207C1-04	FPC CONNECTOR,(1-4)	

****

REC SAFETY BOARD ASSEMBLY <32>

	PW2	LPA10067-01B2	REC SAFETY BOARD ASSY
	S7041	QSW0602-004	PUSH SWITCH
	FW7001	QUM032-07A4A4	PARA RIBON WIRE

****

AUDIO ERASE BOARD ASSEMBLY <46>

	PW2	LPA10106-03A2	AUDIO ERASE BOARD ASSY	
	Q2051	2SC4081/QRS/-X	TRANSISTOR	
		or 2PC4081/R/-X	TRANSISTOR	
		or 2SD1819A/QRS/-X	TRANSISTOR	
	R2054	NRSA02J-153X	MG RESISTOR	15kΩ,1/10W
	R2055	NRSA02J-3R3X	MG RESISTOR	3.3Ω,1/10W
	C2052	QFLC1HJ-333Z	F CAPACITOR	0.033µF,50V
	C2053	NCB21HK-332X	CAPACITOR	0.0033µF,50V
	C2054	NCB21HK-103X	CAPACITOR	0.01µF,50V
	C2055	QEKJ1CM-106	E CAPACITOR	10µF,16V
	T2051	PELN0860	OSC TRANSFORMER	
	CN2052	QGB2024J1-04S	CONNECTOR,(1-4)MAIN	

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION

****

LOADING MOTOR BOARD ASSEMBLY <55>

	PW2	LPA10010-01A2	LOADING MOTOR BOARD ASSY
	CN1	QGB2533K1-02	CONNECTOR

SECTION 4
CHARTS AND DIAGRAMS

NOTES OF SCHEMATIC DIAGRAM

Safety precautions
The Components identified by the symbol ⚠ are critical for safety. For continued safety, replace safety critical components only with manufacturer's recommended parts.

1. Units of components on the schematic diagram

Unless otherwise specified.

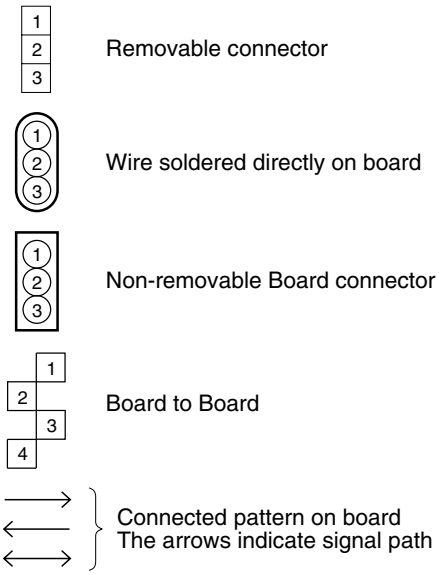
1) All resistance values are in ohm, 1/6 W, 1/8 W (refer to parts list).
   Chip resistors are 1/16 W.
   K or k: kΩ (1000Ω), M: MΩ (1000kΩ)
2) All capacitance values are in μF, (P: PF).
3) All inductance values are in μH, (m: mH).
4) All diodes are 1SS133, MA165 or 1N4148M (refer to parts list).

2. Indications of control voltage

AUX : Active at high

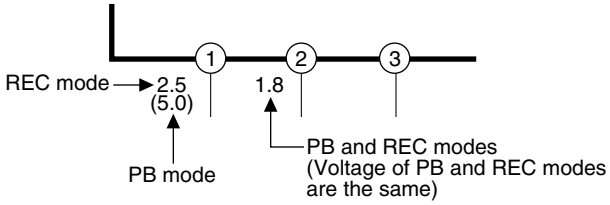
$\overline{\text{AUX}}$ or AUX(L) : Active at low

3. Interpreting Connector indications



4. Voltage measurement

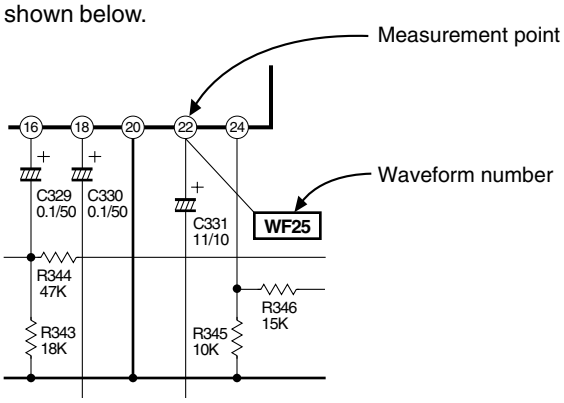
1) Video circuits
   REC : Colour bar signal in SP mode, normal VHS mode
   PB : Alignment tape, colour bar SP mode, normal VHS mode
   — : Unmeasurable or unnecessary to measure
2) Audio circuits
   REC : 1KHz, –8 dBs sine wave signal in SP mode, Normal VHS mode
   PB : REC then playback it
3) Movie Camera circuits
   Measured using a correctly illuminated gray scale or colour bar test charts in the E-E mode
4) Indication on schematic diagram
   Voltage Indications for REC and PB mode on the schematic diagram are as shown below.



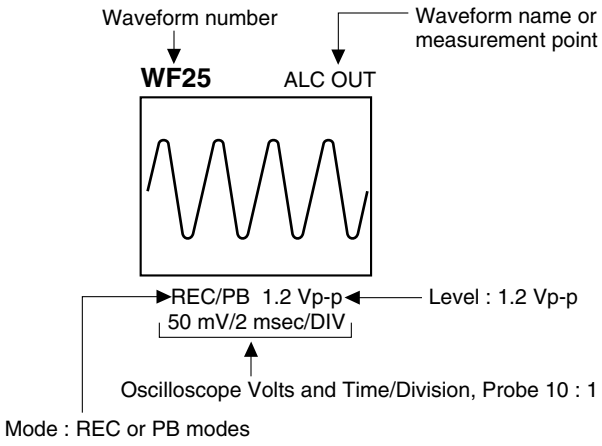
Note: If the voltages are not indicated on the schematic diagram, refer to the voltage charts.

5. Waveform measurement

1) Video circuits
   REC : Colour bar signal in SP mode, normal VHS mode
   PB : Alignment tape, colour bar SP mode, normal VHS mode
2) Audio circuits
   REC : 1KHz, –8 dBs sine wave signal in SP mode, normal VHS mode
   PB : REC then playback it
3) Movie Camera circuits
   Measured using a correctly illuminated gray scale or colour bar test chatrs in the E-E mode
4) Indication on schematic diagram
   Waveform indications on the schematic diagram are as shown below.



5) Waveform indications



6. Signal path Symbols

The arrows indicate the signal path as follows.

Playback signal path

Playback and recording signal path

Recording signal path
(including E-E signal path)

Capstan servo path

Drum servo path

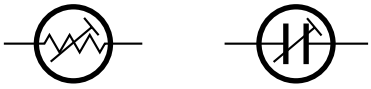
(Example)

R-Y Playback R-Y signal path

Y Recording Y signal path

7. Indication of the parts for adjustments

The parts for the adjustments are surrounded with the circle as shown below.



8. Indication of the parts not mounted on the circuit board

"OPEN" is indicated by the parts not mounted on the circuit board.

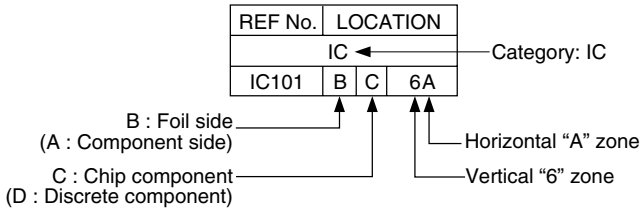
CIRCUIT BOARD NOTES

1. Foil and Component sides

1) Foil side (B side) :
   Parts on the foil side seen from foil face (pattern face) are indicated.
2) Component side (A side) :
   Parts on the component side seen from component face (parts face) indicated.

2. Parts location guides

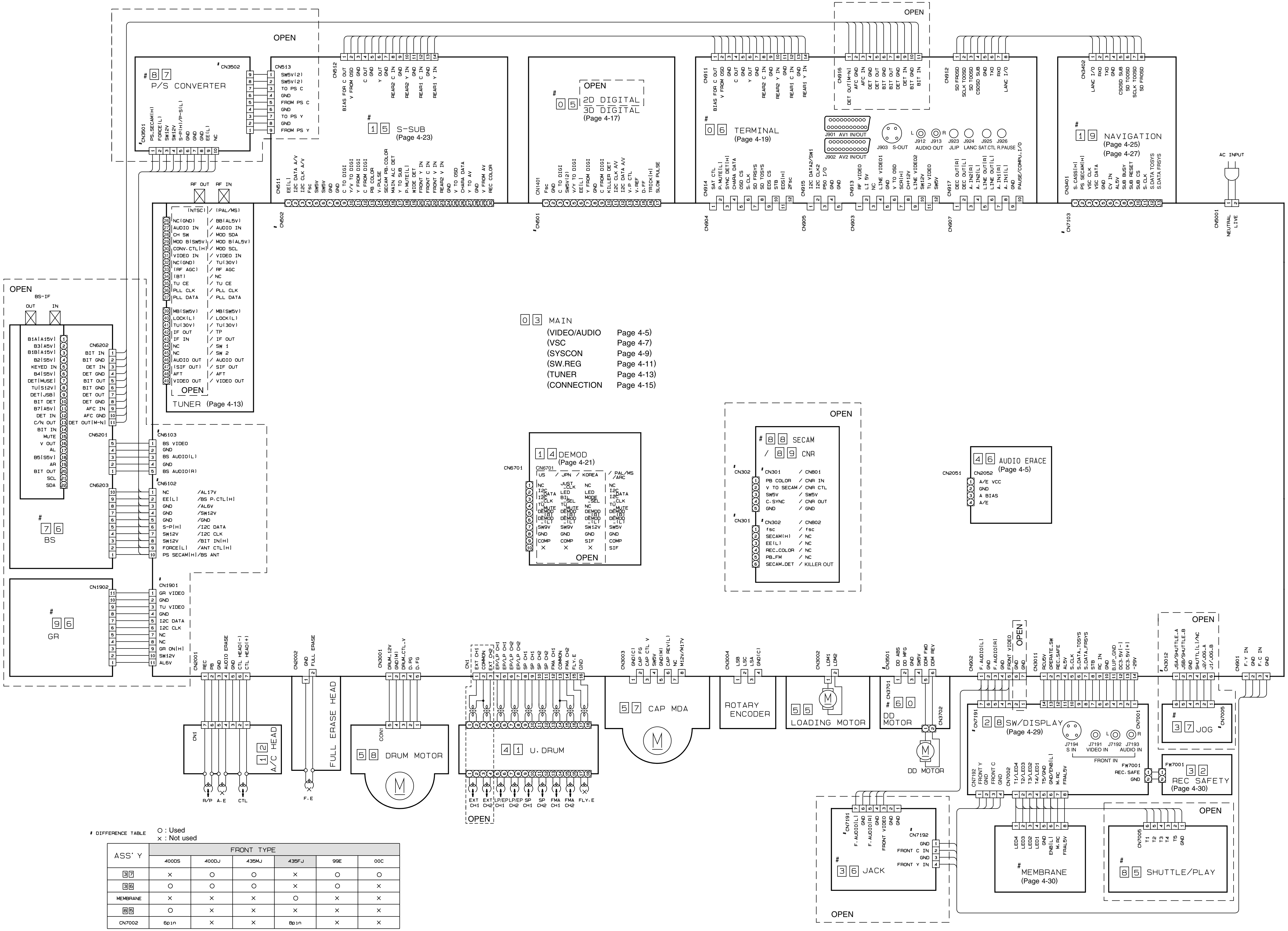
Parts location are indicated by guide scale on the circuit board.



Note:

For general information in service manual, please refer to the Service Manual of GENERAL INFORMATION Edition 4 No. 82054D (January 1994).

4.1 BOARD INTERCONNECTIONS



OPEN
87 P/S CONVERTER
CN3502
CN3501
CN513
CN512
15 S-SUB (Page 4-23)
CN511
CN502
05 OPEN 2D DIGITAL 3D DIGITAL (Page 4-17)
CN1401
CN501
06 TERMINAL (Page 4-19)
CN911
CN916
CN912
CN914
CN915
CN913
CN917
CN904
CN905
CN903
CN907
J901 AV1 IN/OUT
J902 AV2 IN/OUT
J903 S-OUT
J912 J913 AUDIO OUT
J923 JLIP
J924 LANC
J925 SAT.CTL
J926 R.PAUSE
19 NAVIGATION (Page 4-25) (Page 4-27)
CN3402
CN3401
CN7103
AC INPUT
CN5001
NEUTRAL
LIVE
BS-IF
OUT
IN
RF OUT
RF IN
TUNER (Page 4-13)
CN6202
CN6201
CN6203
CN6103
CN6102
76 BS
96 GR
CN1902
CN1901
03 MAIN
(VIDEO/AUDIO Page 4-5)
(VSC Page 4-7)
(SYSCON Page 4-9)
(SW.REG Page 4-11)
(TUNER Page 4-13)
(CONNECTION Page 4-15)
14 DEMOD (Page 4-21)
CN6701
88 SECAM / 89 CNR
CN302
CN301
CN801
CN802
46 AUDIO ERACE (Page 4-5)
CN2051
CN2052
CN2001
CN1
12 A/C HEAD
R/P A.E CTL
CN2002
FULL ERASE HEAD
F.E
CN3001
CON1
58 DRUM MOTOR
41 U.DRUM
EXT CH1 EXT CH2 LP/EP CH1 LP/EP CH2 SP CH1 SP CH2 FMA CH1 FMA CH2 FLY.E
CN3003
57 CAP MDA
CN3004
ROTARY ENCODER
CN3002
55 LOADING MOTOR
CN3501
CN3701
60 DD MOTOR
CN3702
DD MOTOR
CN902
CN3011
28 SW/DISPLAY (Page 4-29)
CN7191
CN7001
J7194 S IN
J7191 VIDEO IN
J7192 J7193 AUDIO IN
FRONT IN
FW7001
CN7192
CN7002
CN3012
37 JOG
CN7005
32 REC SAFETY (Page 4-30)
CN901
36 JACK
MEMBRANE (Page 4-30)
85 SHUTTLE/PLAY
DIFFERENCE TABLE
p10270001a_rev0

DIFFERENCE TABLE
○ : Used
× : Not used

ASS' Y	FRONT TYPE					
	400DS	400DJ	435MJ	435FJ	99E	00C
37	×	○	○	×	○	○
36	○	○	○	×	○	×
MEMBRANE	×	×	×	○	×	×
85	○	×	×	×	×	×
CN7002	6pin	×	×	8pin	×	×

NO	NAME
96	GR
89	CNR
88	SECAM
87	P/S CONVERTER
85	SHUTTLE/PLAY
76	BS
60	DD MOTOR
58	DRUM MOTOR
57	CAP MDA
55	LOADING MOTOR
46	AUDIO ERASE
41	U.DRUM
37	JOG
36	JACK
32	REC SAFETY
28	SW/DISPLAY
19	NAVIGATION
15	S-SUB
14	DEMODU
12	A/C HEAD
06	TERMINAL
05	2D/3D DIGITAL
03	MAIN

4.2 VIDEO/AUDIO AND AUDIO ERASE SCHEMATIC DIAGRAMS

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.

0 3 MAIN (VIDEO/AUDIO)

4 6 AUDIO ERASE

p10273001a_rev0.1

#DIFFERECE TABLE ○ : Used × : Not used

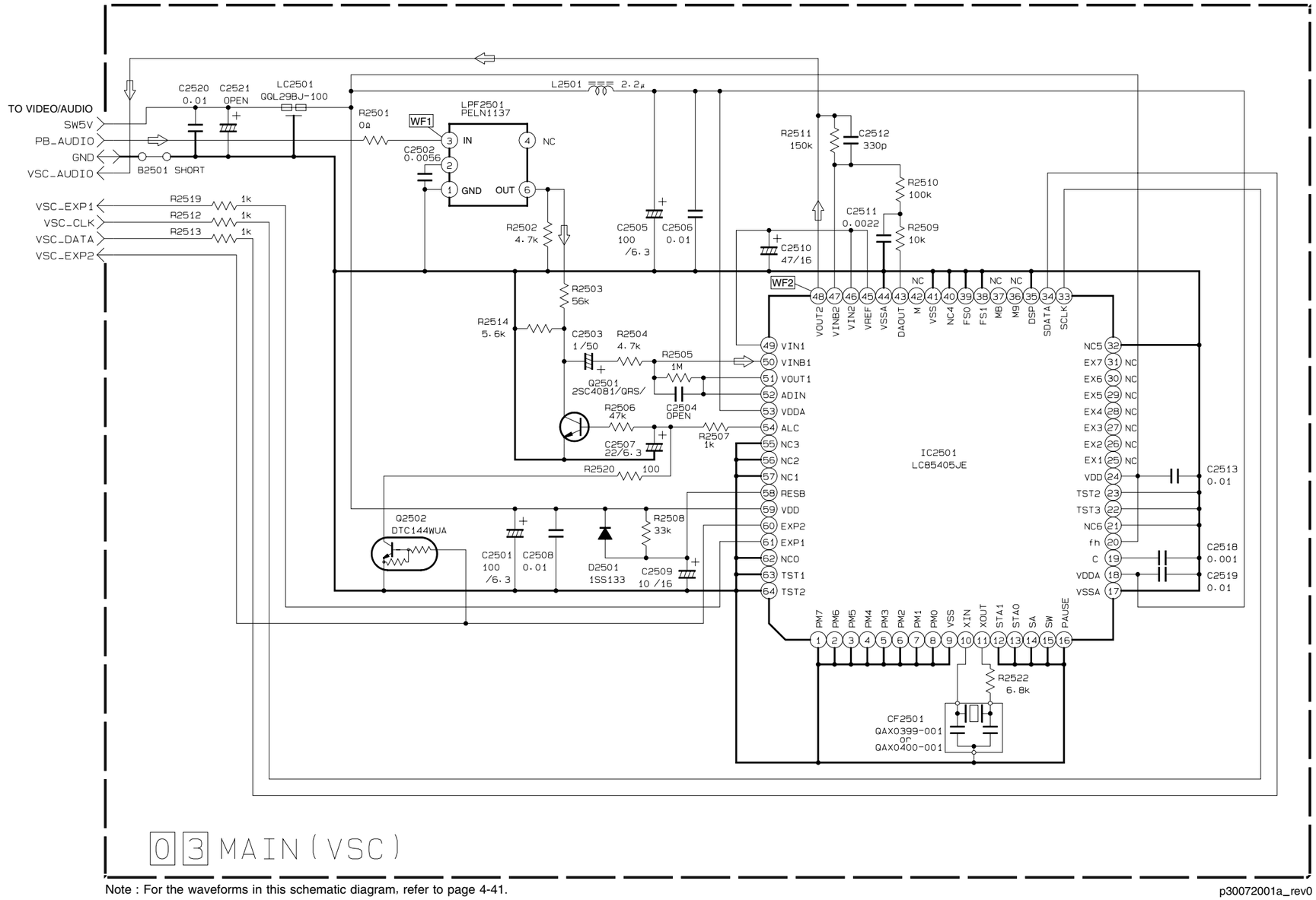
	RF-Out R2001 R2002 C2208	CN1	
HR-S6700EK/EU	○	1-14	
HR-S6711EU	○	1-14	
HR-S6722EK	○	1-14	
VSH2150G	○	1-14	
HR-S6700MS	×	1-14	
VSH2150F	×	1-14	
HR-J870EK/EU	○	4-14	
HR-S9700EK/EU	○	4-16	

NOTES:UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN μF.
ELECTROLYTIC
CERAMIC
MYLER
NON POLAR

Note : For the waveforms in this schematic diagram, refer to page 4-41.

4.3 VSC SCHEMATIC DIAGRAM

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.



Note : For the waveforms in this schematic diagram, refer to page 4-41.

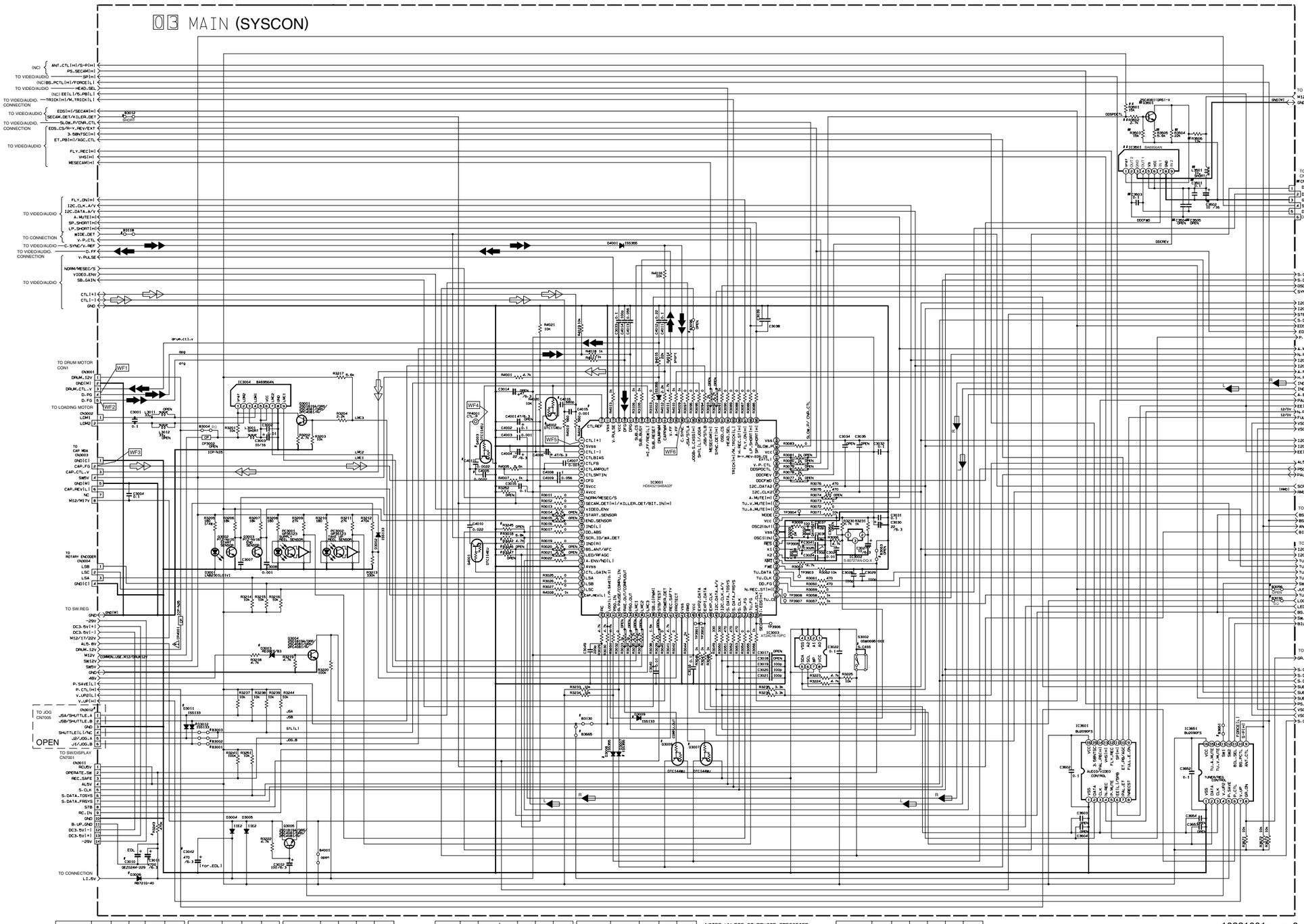
p30072001a_rev0

NOTES:UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN μF.

ELECTROLYTIC
CERAMIC
MYLER
NON POLAR

4.4 SYSTEM CONTROL SCHEMATIC DIAGRAM

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.



#DIFFERENCE_TABLE

O : Used
× : Not used

BACKUP_TIME	C3010	C3011	C3042	R3243 D3009 B3130	B3030 B3665
3MIN	x	3300	x	x	0
10MIN	x	4700	x	x	0
60MIN	-229	x	0	x	0
BATT	x	3300	x	x	0
FULL_P.SAVE	-47Δ	x	x	0	x

J/S_CTL_TYPE	CN3012	B3003 D3011 D3012	B3001 B3002
435FJ-J/S	x	x	x
J/S	0	0	x
J-J	0	x	0
OTHER	x	x	x

FEATURE_TYPE	D3008 Q3007	D3007	Q3009	S3002
SVHS				0
TY-LINK(P50)	0			
R.PAUSE		SHORT		
R.A.EDIT		0	0	
AV_COMPU		0	0	

	B3056	B3012	B3030	B3118	R3242	B3651
JPN	0	x	x	0	x	x
US.ETC.	x		0	x		x
LATIN	x	0	0	x		x
EURO	x	0	0	x	0	x
ASIA	x	0	0	x		0

SUB_CLK_ADJ	X3001	C3025	C3041	C3024
ADJ	GAX0445	0	x	22p
FIX	GAX0444	x	10p	12p

NOTES:UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN μF.

ELECTROLYTIC
CERAMIC
MYLER
NON POLAR

MECHA_TYPE	C4015	C4016	Q4002	C4005	C4017	Q4003
Y29-2	0.001	x	x	0	x	x
Y29-1	0.001	x	x	x	0	0
Y29-1FSEP	330p	0	0	x	0	0

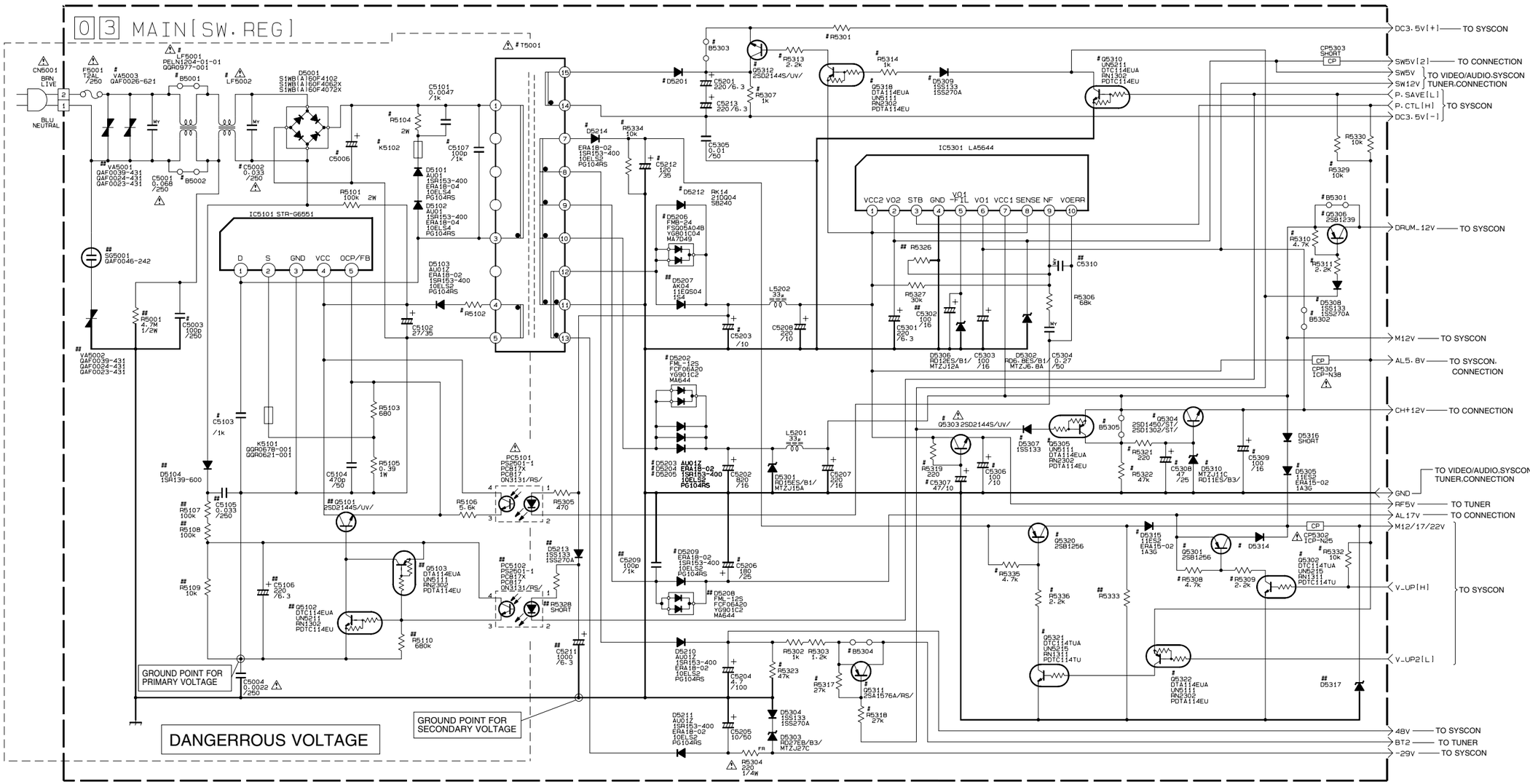
##_DD_MODELS_ONLY

p10281001a_rev0

Note : For the waveforms in this schematic diagram, refer to page 4-41.

4.5 SWITCHING REGULATOR SCHEMATIC DIAGRAM

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.



p20169001a_rev1

MARK ELEMENTS ARE NOT MOUNTED

DIFFERENCE TABLE 1

		D5202	D5203 D5204 D5205	D5206	D5212	C5203
D25	EU/EK/MS/A/M	NO	YES	NO	YES	1200
S1	EU/EK	YES	NO	YES	NO	1200
	MS	YES	NO	YES	NO	2200
	A	YES	NO	YES	NO	1200
	UM/M/EN/K	NO	YES	YES	NO	1200
S2	EU/EK/MS	YES	NO	YES	NO	2200
S25 S36	EU/EK/MS	YES	NO	YES	NO	2200

DIFFERENCE TABLE 2

	LF5001	LF5002	C5002	C5006	B5001 B5002			
AC INPUT 220-240V (CE)	YES	QQR0978-001 QQR0608-001 QQR0609-001 QQR0610-001	YES	68/400	NO			
AC INPUT 110-240V (OTHER)	NO	QQR0532-001 QQR0533-001 QQR0516-001 QQR0627-001 QQR0816-001	NO	82/400	YES			

DIFFERENCE TABLE 3

CH+12V	B5302	D5304 D5310 R6321	R5322 C5308 C5309
YES	NO	YES	
NO	YES	NO	

DIFFERENCE TABLE 4

P.SAVE		B5303 B5304	Q5305 Q5310 Q5311 Q5312	Q5313 D5307 D5309 R5307	R5323 R5314 R6317 R5316	B5301	Q5306 D5308 R6310 R5311	B5305
YES	FF/REW 65s	NO	YES			NO	YES	NO
	OTHER	NO	YES			YES	NO	NO
NO		YES	NO			YES	NO	YES

DIFFERENCE TABLE5

		R5301	D5201
LEVEL IND YES	EU/EK/MS	1	AK04 1EQS04 1S4
	OTHER	SHORT	
LEVEL IND NO		SHORT	AU01Z 10ELS2

DIFFERENCE TABLE 6

	R5104	C5003	C5103	C5107	K5102
PHILIPS /75	68k	YES	33p	NO	SHORT
PHILIPS /78	68k	YES	100p	YES	YES
OTHER	150k	NO	33p	NO	SHORT

DIFFERENCE TABLE 7

HIGH SPEED FF/REW		Q5301 Q5302 D5209 C5206	R5308 R5309 R5332	D5305	D5314	D5315	Q5320 C5212 Q5321 R5334 Q5322 R5335 D5214 R5336	T5001	R5102
NO		NO		SHORT	NO	NO	NO	GQS0052-001	4.7
100s 85s		YES		YES	SHORT	NO	NO	GQS0052-001	4.7
65s	S1.S2	YES		YES	11ES2 EMA15-02 1A3G	YES	YES	GQS0057-001	33
	S25.S36	YES		YES	SHORT	YES	YES	GQS0057-001	39

DIFFERENCE TABLE 8

	VA5003
JVC	NO
PHILIPS	YES

DIFFERENCE TABLE 9

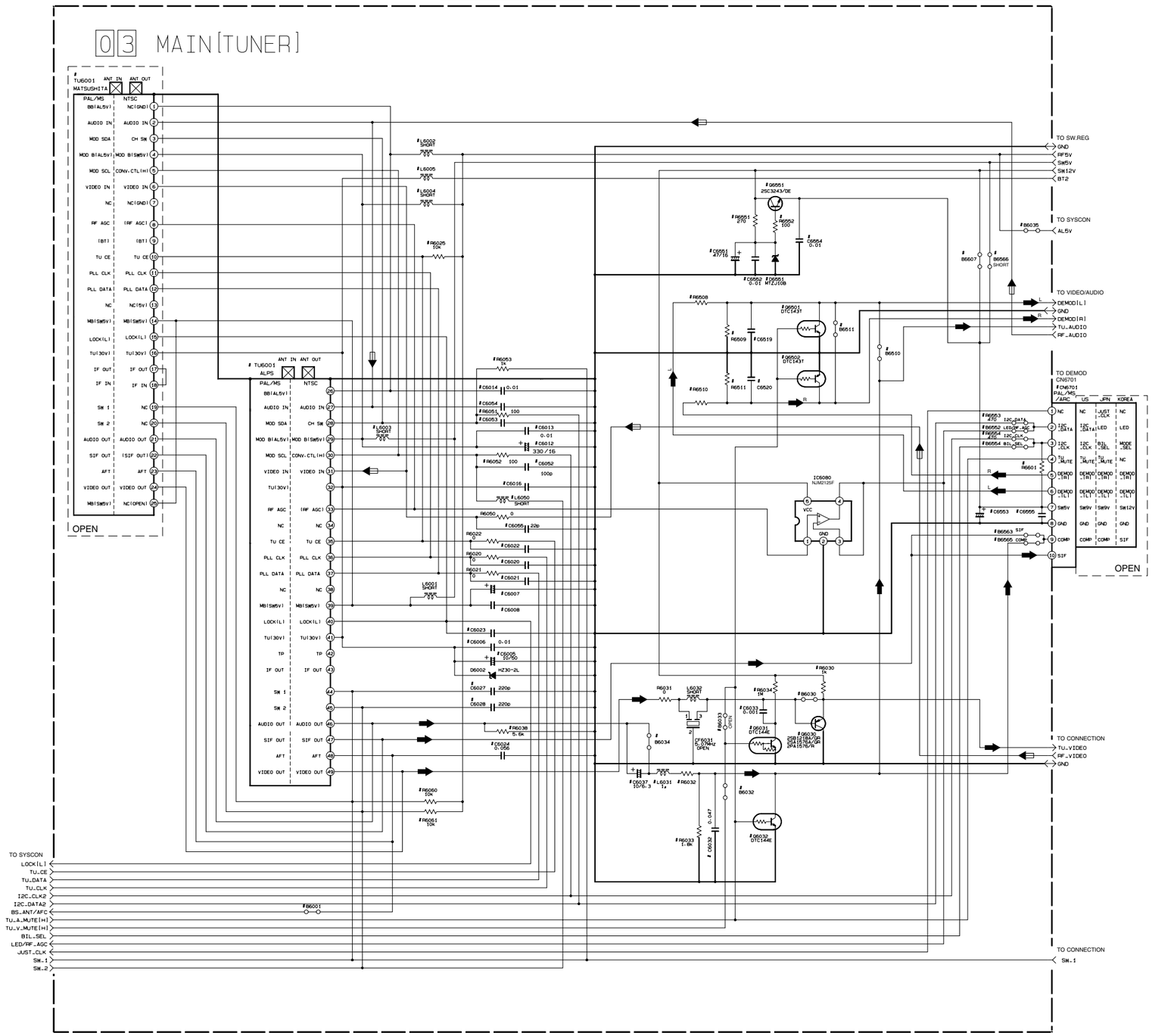
	Q5303 R5319	C5306 C5307
UM/M/EN	NO	
OTHER	YES	

NOTES:UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN µF.

ELECTROLYTIC
CERAMIC
MY MYLER
N NON POLAR

4.6 TUNER SCHEMATIC DIAGRAM

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.



NOTES:UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN μF.
ELECTROLYTIC
CERAMIC
MYLER
NON POLAR

DIFFERENCE TABLE

○ : Used
× : Not used

TUNER	SYMBOL	US/UM/ PAL-M/PAL-N		JAPAN		KOREA (K2)	FRANCE MS		EU/EK	ARC	
										3SYSTEM	4SYSTEM
		MATSUSHITA	ALPS	MATSUSHITA	SANYO	MATSUSHITA	LG	ALPS	ALPS	ALPS	MATSUSHITA
TUNER UNIT	TU6001	GAU0170	GAU0163	GAU0169	GAU0158	GAU0125	GAU0175	GAU0152	GAU0151	GAU0151	GAU0111
	R6025	×	×	×	○	×	×	×	×	×	×
ATS+	IC6080	×	×	×	×	×	○	○	○	×	×
VIDEO BUFFER	R6030-Q6030	○	×	○	○	○	○	○	○	○	○
	B6030	×	○	×	×	×	×	×	×	×	×
TU.V.MUTE	Q6031	×	×	×	×	×	○	○	○	×	×
	R6034	×	×	×	×	×	×	×	×	×	×
	C6033-B6032	×	×	×	×	×	○	○	○	×	×
TU.A.MUTE	Q6032	×	×	×	×	×	○	○	○	○	○
AUDIO OUT	L6031	SHORT	SHORT	SHORT	SHORT	×	SHORT	SHORT	SHORT	SHORT	SHORT
	R6032	12kΩ	12kΩ	0Ω	0Ω	×	2.7kΩ	3.3kΩ	3.9kΩ	3.9kΩ	3.9kΩ
	R6033	12kΩ	12kΩ	×	×	×	1.8kΩ	1.8kΩ	1.8kΩ	1.8kΩ	1.8kΩ
	C6032	×	×	×	×	×	×	×	○	○	○
	B6034	○	○	○	○	×	×	×	×	×	×
	C6037	×	×	×	×	×	○	○	○	○	○
AFC	B6001	○	○	×	×	○	○	○	○	○	○
	C6024	×	×	×	×	○	×	×	×	×	×
CENELEC	C6054	×	×	×	×	○	×	×	×	×	×
TU 30V	C6005	×	×	×	×	×	×	×	×	×	×
	C6006	×	×	×	×	×	○	○	○	○	○
MB(SW5V)	C6007	×	×	×	×	×	220μF/6.3V	220μF/6.3V	220μF/6.3V	220μF/6.3V	220μF/6.3V
	C6008	×	×	×	×	×	○	○	○	○	○
MOD B(5V)	C6012-C6013	×	×	×	×	×	×	×	○	○	○
	L6003	○	○	○	○	○	×	×	×	×	×
	L6004	×	×	×	×	×	×	×	○	○	○
MOD B(30V)	C6015	×	×	×	×	×	○	○	○	○	○
BB(AL5V)	C6014-L6002	×	×	×	×	×	○	○	○	○	○
PLL CLK	C6020	×	×	×	×	×	×	×	×	×	×
PLL DATA	C6021	×	×	×	×	×	×	×	×	×	×
TU CE	C6022	×	×	×	×	×	×	×	×	×	×
LOCK	C6023	×	×	×	×	×	×	×	○	○	×
MOD SDA /CH SW	R6053	○	○	○	○	○	×	×	×	×	×
	R6051	×	×	×	×	×	×	×	○	○	○
	C6053	×	×	×	×	×	×	×	×	×	×
MOD SCL /CONV.CTL	R6052,R6061	×	×	×	×	×	×	×	○	○	○
	C6052	×	×	×	×	×	×	×	×	×	×
	L6050-B6035	○	○	○	○	○	×	×	×	×	×
SYSTEM SW	C6027-C6028	×	×	×	×	×	×	○	×	×	×

DEMOD	SYMBOL	NTSC			PAL/MS/ARC		
		US MTS	JAPAN MTS	KOREA MTS	NICAM/A2		MONO
					MICRONAS	PHILIPS	
DEMOD PWB ASS'Y	CN6701	PB11076*	PB11087*	PB11091*	LPA10021 -****	LPA10060 -**** (LPA10084)	-
9V REG	R6551-R6552 Q6551-D6551	○	○	×	×	×	×
	C6551-C6554	×	×	×	×	×	×
SW12V	B6607	×	×	○	×	×	×
DEMOD OUT	R6508-R6510	0Ω	0Ω	6.8kΩ	0Ω	0Ω	×
	R6509-R6511	×	×	6.8kΩ	×	×	×
	C6519-C6520	×	×	0.022μF	×	×	×
MUTE	Q6501-Q6502	○	×	○	×	×	×
TUNER MONO	B6510-B6511	×	×	×	×	×	○
DEMOD SELECTION	R6553-R6554	470Ω	×	×	0Ω (470Ω)		×
	R6552-B6554	×	○	○	×	×	×
	B6563	×	×	○	×	×	×
	B6565	○	○	×	×	○	×

SWITCH LOGIC

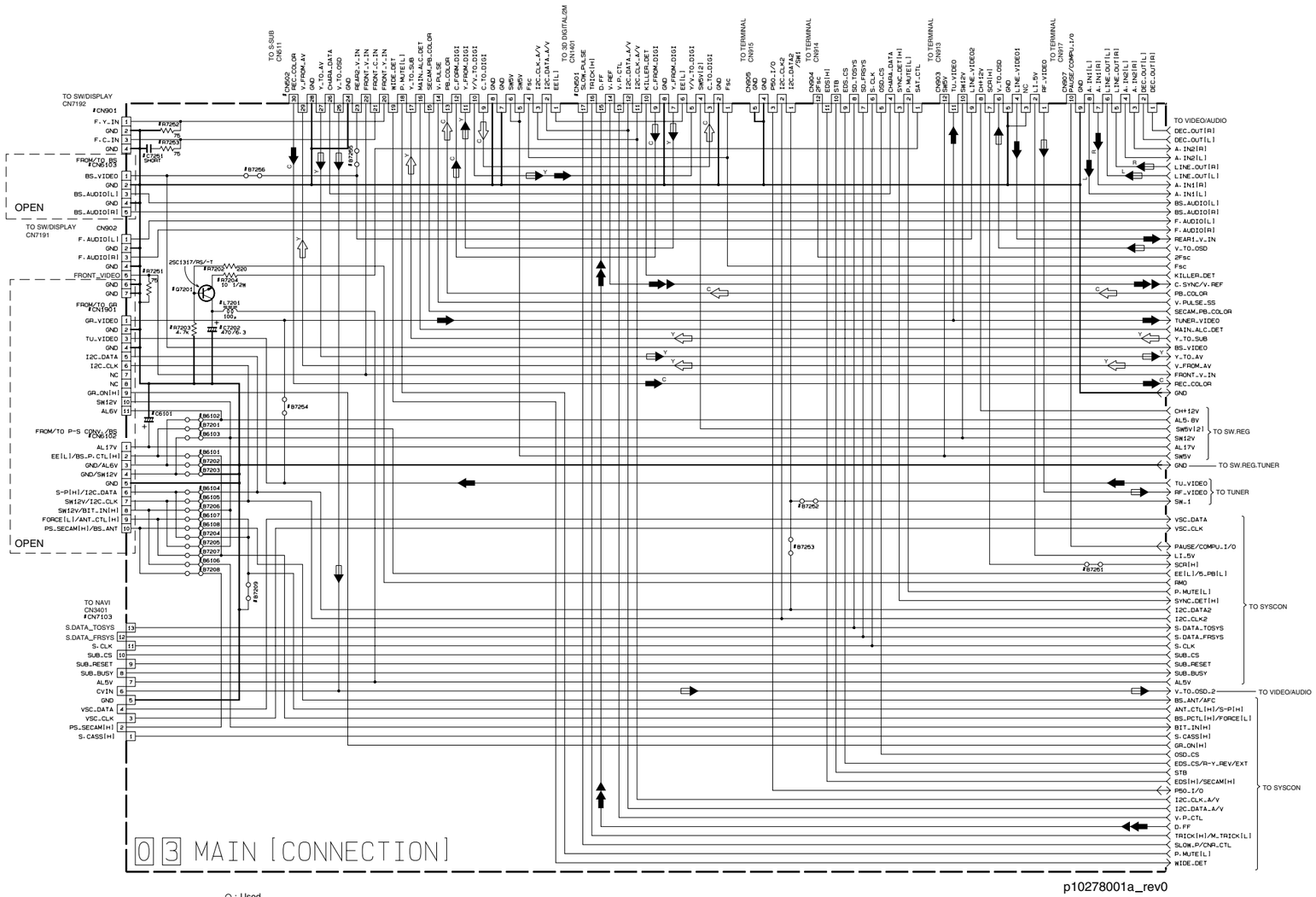
	FRANCE MS (LG)	NTSC		MULTI SYSTEM (MATSUSHITA)				MULTI SYSTEM (ALPS)			
		OPEN	L(0V)	BG	I	DK	M	BG	I	DK	M
SW1	SECAM(H)	US3/J1	US4/J2	OPEN	OPEN	L(0V)	L(0V)	L(0V)	H(5V)	L(0V)	H(5V)
SW2	SECAM.VL(H)	CONV.ON	CONV.OFF	OPEN	L(0V)	OPEN	L(0V)	L(0V)	L(0V)	H(5V)	H(5V)

SYSTEM TABLE

	EU/EE/EA	EK/ES
SYSTEM	BG/DK	I

4.7 CONNECTION SCHEMATIC DIAGRAM

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.



DIFFERENCE TABLE

○ : Used
× : Not used

NAVI / CN7103
YES ○
NO ×

GR / CN1901	B7254
YES ○	×
NO ×	○

SVHS / CN601	CN602
YES	○
NO	×

	CN6102	B6101 B6102 B6103 B6104 B6105 B6106 B6107 B6108 B6109 CN6103	B7201 B7202 B7203 B7204 B7205 B7206 B7207 B7208	B7204 B7205 B7206	B7209	B7203 B7204 B7205 B7206 C6101 L7201 L7202 C7251	B7251 B7253	B7252	B7255	B7256	CN901	B7253 B7254 C7251	R7251
NTSC MODELS WITH BS TUNER	1-10PIN	○	×	×	×	×	×	○	○	×	○	×	×
NTSC MODELS WITH CABLE MOUSE	×	×	×	×	×	○	×	○	×	×	○	×	×
OTHER NTSC MODELS	×	×	×	×	×	×	×	○	×	×	○	×	×
S36 MS	1-10PIN	×	○	○	×	○	○	×	○	×	○	○	○
OTHER MS MODELS WITH SVHS	5-8PIN	×	×	○	○	○	○	×	○	×	○	○	○
OTHER PAL MODELS WITH SVHS	×	×	×	×	×	○	○	×	○	×	○	○	○
OTHER PAL MODELS WITHOUT SVHS	×	×	×	×	×	○	○	×	×	○	×	×	○
ARC MODELS WITH SVHS	×	×	×	×	×	×	×	×	×	○	×	×	×
ARC MODELS WITHOUT SVHS	×	×	×	×	×	×	×	×	×	×	×	×	×

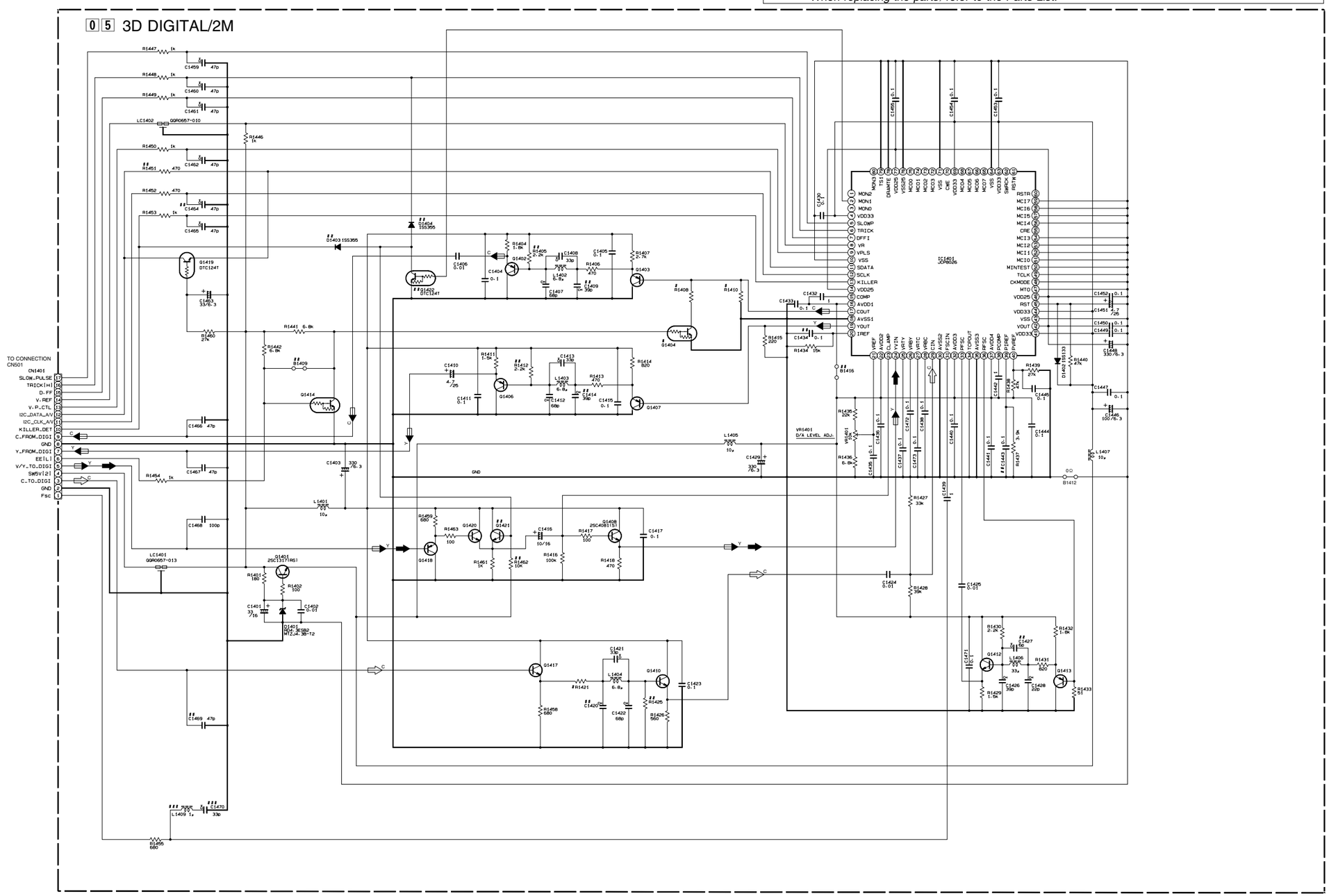
NOTES:UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN μF.

ELECTROLYTIC
CERAMIC
MYLER
NON POLAR

	LAST NO						VACANT NO
R	—	—	—	—	—	7253	7201, 7205-7250
C	—	—	—	6101	—	7251	7201, 7203-7250
Q	—	—	—	—	—	7201	
L	—	—	—	—	—	7201	
CN	502	907	1901	6103	7103	—	906-6101, 7101, 7102
B	—	—	—	6108	—	7256	7210-7250

4.8 3D DIGITAL/2M SCHEMATIC DIAGRAM

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.



p10276001a_rev0.1

NOTES:UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN μF.
ELECTROLYTIC
CERAMIC
MYLER
NON POLAR

MARK ELEMENTS ARE NOT MOUNTED.
ALL SINGLE DIODE:1SS133 OR 1N4148.
ALL PNP TRANSISTOR:2SA1576A(QR) OR 2SB1218A(QR) OR 2PA1576(R)
ALL NPN TRANSISTOR:2SC4081(QRS) OR 2SD1819A(QRS) OR 2PC4081(R)
ALL NPN DIGITAL TRANSISTOR:DTC144WUA OR UN521E OR RN1309

Marked elements may differ depending on the model.
Be sure to the check the Parts List.

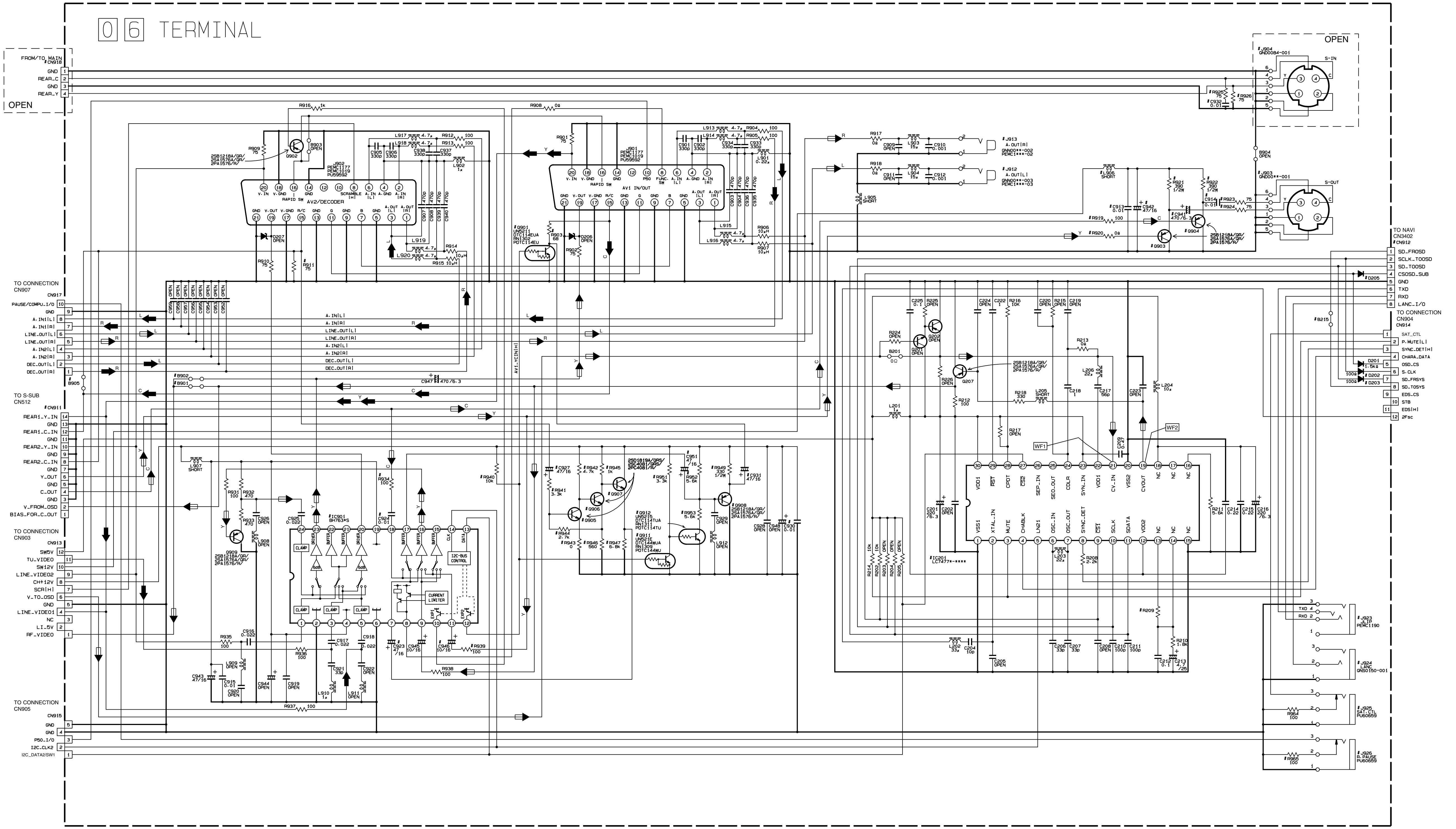
○ : Used
× : Not used

DIFFERENCE TABLE

	Q1404	R1408	R1410	R1421	
PAL/MS	○	1.2k	390	390	
NTSC	×	OPEN	240	330	

4.9 TERMINAL SCHEMATIC DIAGRAM

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.



p10275001a_rev0

Note : For the waveforms in this schematic diagram, refer to page 4-41.

DIFFERENCE TABLE

O : Used
× : Not used

MODELS \ SYMBOLS	S-VHS: R903·R911·R919−R924·R939−R947 R934·R949·R951−R953·C913·C914 C923·C924·C927·C930·C931·C941 C942·C946·C951·Q901·Q903−Q908 Q911·Q912·L906·J903·B901·CN911	S-VHS: B902 B905	S IN: J904 R925 R926 C932 CN918	OSD LANGUAGE: IC201	OSD LANGUAGE: R209	NAVIGATION PWB: D202 D203	NAVIGATION PWB: D205 CN912	NAVIGATION PWB: B215	S OUT: J903	A.OUT: J912 J913	JLIP: J923	LANC: J924	SAT.CTL: J925	R.PAUSE: J926 R965	CH+IC: IC901
V13S36 EU/EK	O	×	×	6-9791	12k	×	O	×	85	21/126	O	O	O	O	6
V13S36 MS	O	×	×	5-9750	5.1k	×	O	×	85	21/126	O	O	O	O	6
V13S26 EU(PHILIPS)	O	×	×	6-9791	12k	×	O	×	84	23/009	×	O	×	O	6
V13S25 EU/EK	O	×	×	6-9791	12k	×	O	×	84	23/009	O	O	O	O	6
V13S25 MS	O	×	×	5-9750	5.1k	×	O	×	84	23/009	O	O	O	O	6
V13S2/S22 EU/EK·S21 EU	O	×	×	6-9791	12k	O	×	×	84	23/009	×	×	O	O	6
V13S2 EU/EK(PHILIPS)	O	×	×	5-9750	5.1k	O	×	×	84	23/009	×	×	×	O	6
V13S2 MS	O	×	×	5-9750	5.1k	O	×	×	84	23/009	×	×	O	O	6
V13S2 MS(PHILIPS)	O	×	×	5-9750	5.1k	O	×	×	84	23/009	×	×	×	O	6
V13S1 EU/EK·S11EU·S12EK	O	×	×	6-9791	12k	O	×	×	84	23/009	×	×	O	×	6
V13S1 MS	O	×	×	5-9750	5.1k	O	×	×	84	23/009	×	×	O	×	6
V13D2 EU/EK	×	O	×	6-9791	12k	×	O	×	×	23/009	O	O	O	O	6
V13D2 MS	×	O	×	5-9750	5.1k	×	O	×	×	23/009	O	O	O	O	5

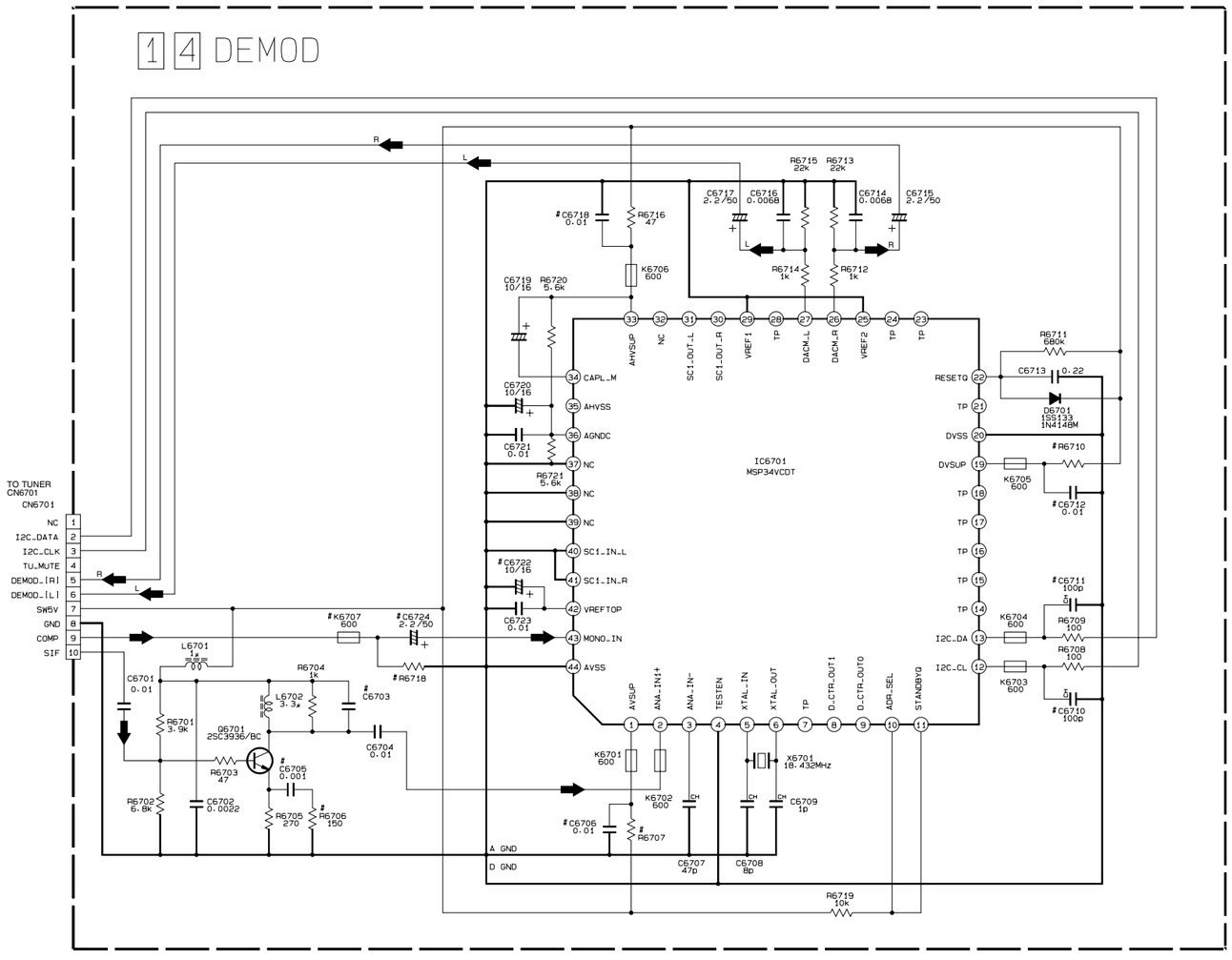
NOTES:UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN μF.

- ELECTROLYTIC
- CERAMIC
- MYLER
- NON POLAR

LAST NO			VACANT NO	
R	226	965	201, 206, 207, 219-223	927-930, 948, 950, 954-963
C	225	959	203, 221	949, 950
D	207	—	204	
Q	207	912	203-206	910
L	206	920		
B	215	905	202-214	
J	—	926		905-911, 914-922
IC	201	901		
CN	—	918		901-910, 916

4.10 DEMODULATOR SCHEMATIC DIAGRAM

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.



p20162001a_rev2

DIFFERENCE TABLE
○ : Used
× : Not used

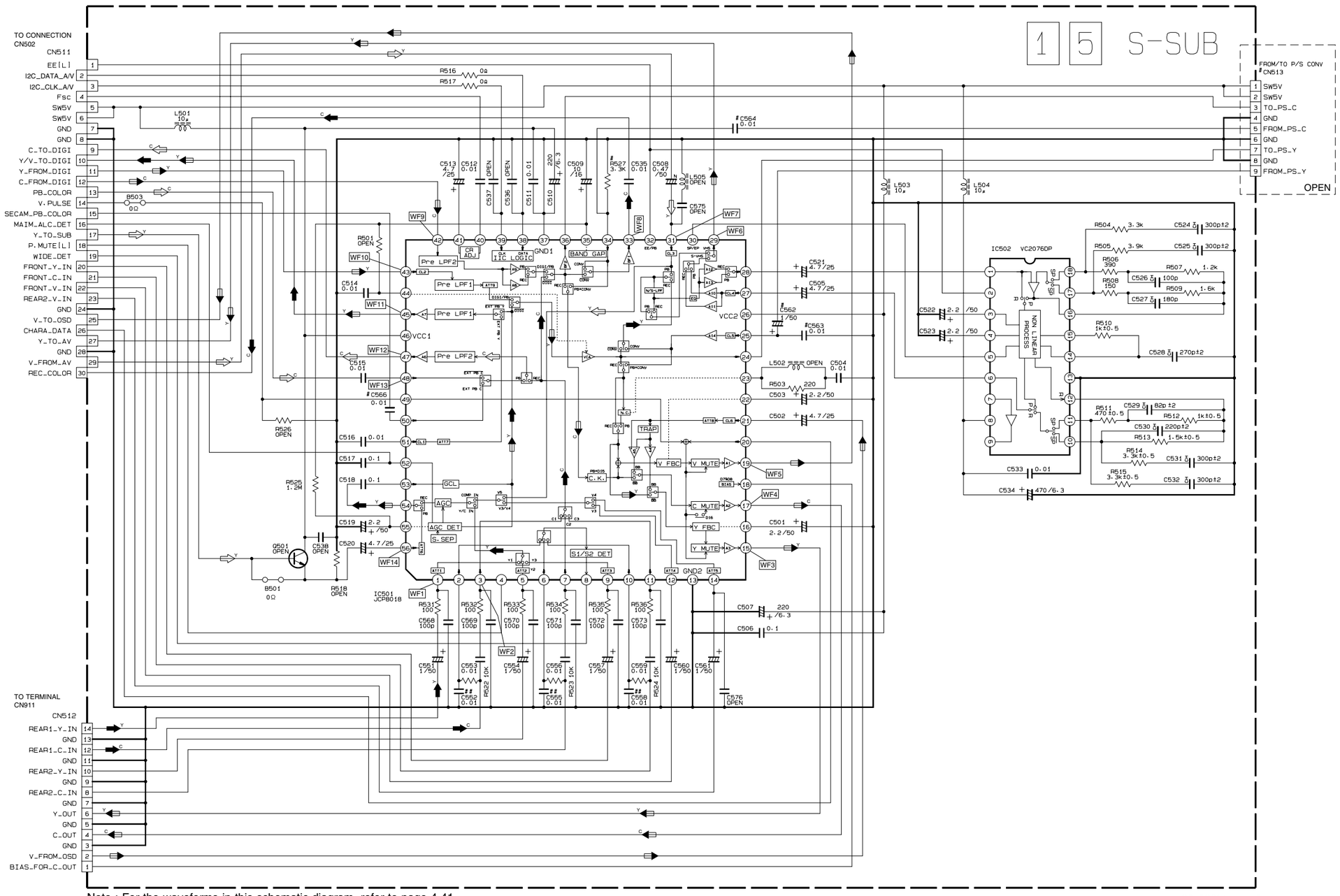
	SYMBOL	FRANCE MS	BASIC	ARC	
		STEP UP EU/EK	EU/EK	3SYSTEM	4SYSTEM
PRE AMP	R6706 C6705	○	○	×	×
	C6703	×	×	180p	220p
MONO IN	C6724 K6707	○	×	×	×
	R6718	×	×	×	×
ANALOG Vcc	R6707	22	47	47	47
	C6706	×	×	×	×
I2C_bus	C6710 C6711	×	×	×	×
DIGITAL Vcc	R6710	10	12	12	12
	C6712	×	×	×	×
DAC Vcc	C6718	×	×	×	×
	C6722	×	×	×	×

NOTES:UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN μF.

ELECTROLYTIC
CERAMIC
MYLER
NON POLAR

4.11 S-SUB SCHEMATIC DIAGRAM

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.



Note : For the waveforms in this schematic diagram, refer to page 4-41.

p20168001a_rev0

DIFFERENCE TABLE

	CN513 C562 C564 C566	C563 R527
MS	○	×
OTHERS	×	○

○ : Used
× : Not used

Marked elements may differ depending on the model. Be sure to the check the Parts List.

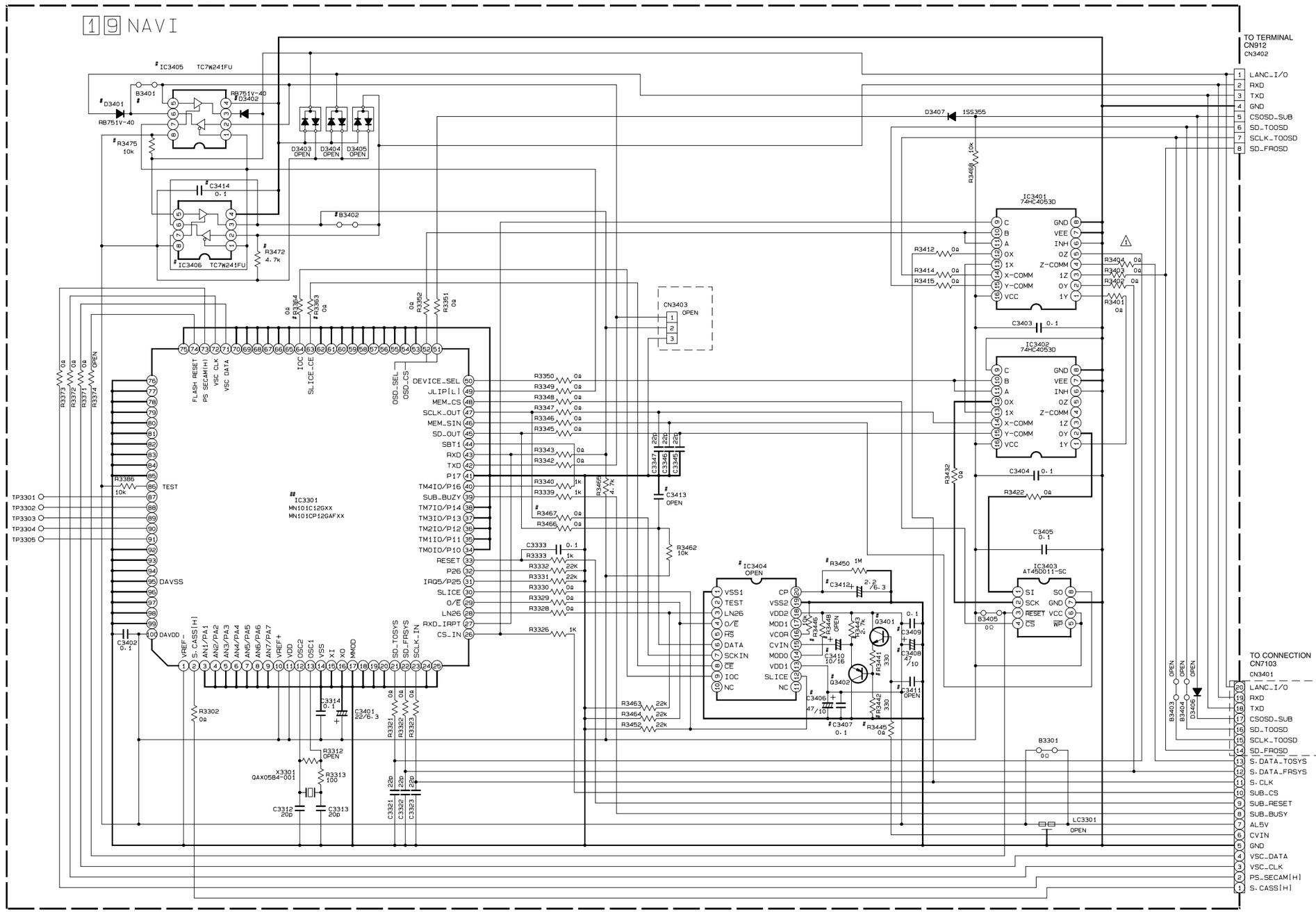
NOTES : UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN μF.

+ ELECTROLYTIC
CERAMIC
MY MYLER
NP NON POLAR

4.12 NAVIGATION SCHEMATIC DIAGRAM [LPB10108-001*]

There are currently two types of Navigation boards in used, these are the LPB10108-001 and the LPB10108-002*.*
These two boards have different Schematic Diagrams and Parts Lists.
Be sure to check the board number before selecting its corresponding Schematic Diagram and Parts List.

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.



p20167001a_rev1

DIFFERENCE TABLE O : Used, × : Not used

LANC	WITH LANC	WITHOUT LANC
IC3405, C3414, IC3406, D3402, R3472, R3475	○	×

ALL SET	WITH ALL SET	WITHOUT ALL SET
Q3401, Q3402, C3406–C3413, R3363, R3364, R3441, R3450, R3467, IC3404	○	×

JLIP	WITH JLIP	WITH JLIP WITHOUT LANC
D3401	○	○
B3401, B3402	×	○

DIFFERENCE TABLE

IC3301 ROM CODE	MODEL
CC	HR-S9800U
CD	PHILIPS US, UM, M, K
CE	PHILIPS /55, /75, /77, HR-VXG300
CG	JVC EU, EK, MS, VR1600/58

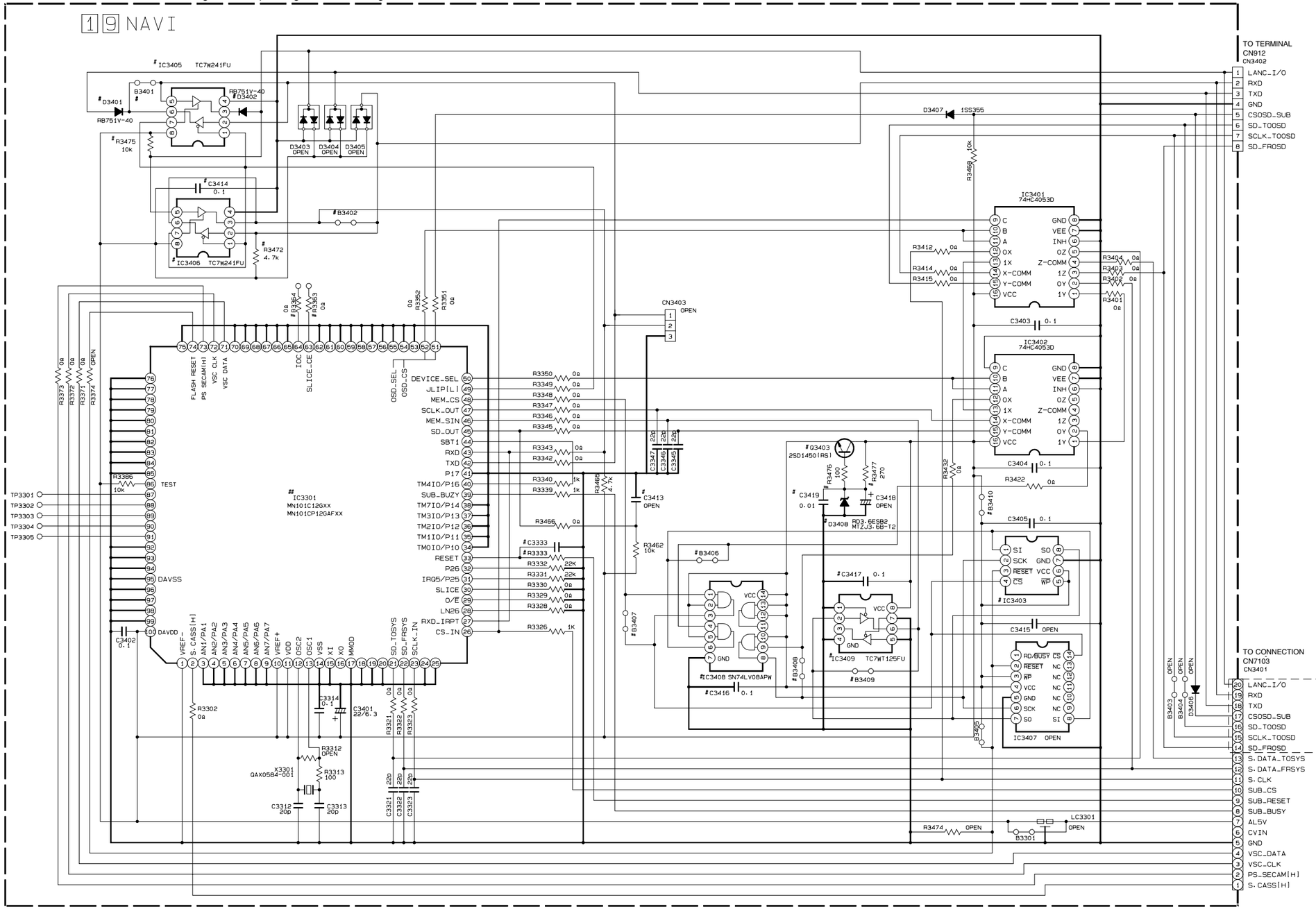
NOTES: UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN μF.

ELECTROLYTIC
CERAMIC
MYLER
NON POLAR

4.13 NAVIGATION SCHEMATIC DIAGRAM [LPB10108-002*]

There are currently two types of Navigation boards in used, these are the LPB10108-001 and the LPB10108-002*.*
These two boards have different Schematic Diagrams and Parts Lists.
Be sure to check the board number before selecting its corresponding Schematic Diagram and Parts List.

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.



p20167002a_rev0

DIFFERENCE TABLE

○ : Used
× : Not used

IC3403	AT45D011-SC	AT45DB011-SC
IC3408 IC3409 Q3403 D3408 R3476 R3477 C3416 C3417 C3419	×	○
B3406-B3410	○	×
R3333	1k	330
C3333	0.1μF	4.7kΩ

LANC	WITH LANC	WITHOUT LANC
IC3405, C3414 IC3406, D3402 R3472, R3475	○	×

JLIP	WITH JLIP	WITH JLIP WITHOUT LANC
D3401	○	○
B3401 B3402	×	○

DIFFERENCE TABLE

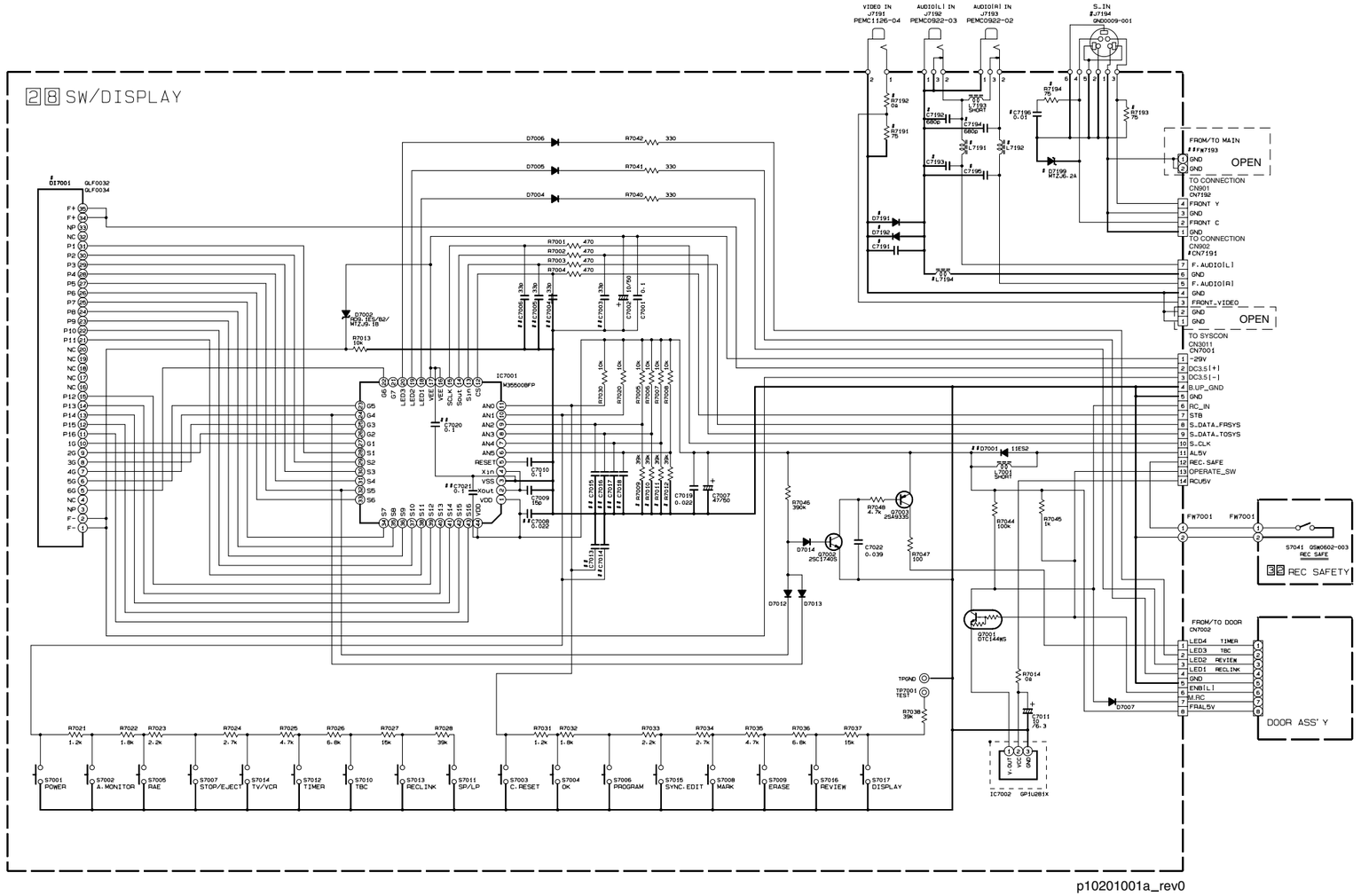
IC3301 ROM CODE	MODEL
CC	HR-S9800U
CD	PHILIPS US,UM,M,K
CE	PHILIPS /55,/75,/77,HR-VXG300
CG	JVC EU,EK,MS,VR1600/58

NOTES:UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN μF.

ELECTROLYTIC
CERAMIC
MYLER
NON POLAR

4.14 SW/DISPLAY AND REC SAFETY SCHEMATIC DIAGRAMS

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.



p10201001a_rev0

#:DIFFERENCE TABLE 1

OPTION	R7009	R7010	R7011	R7012
S36EU S36EK S36MS	NO	NO	NO	NO

#:DIFFERENCE TABLE 2

AV IN	CN7191	R7191	R7192	L7191 L7192	L7193 L7194	C7192 C7194	C7193 C7195	D7191 D7192	C7191		
S36EU S36EK S36MS	3-7	NO	YES	100u	SHORT	YES	NO	NO	NO		

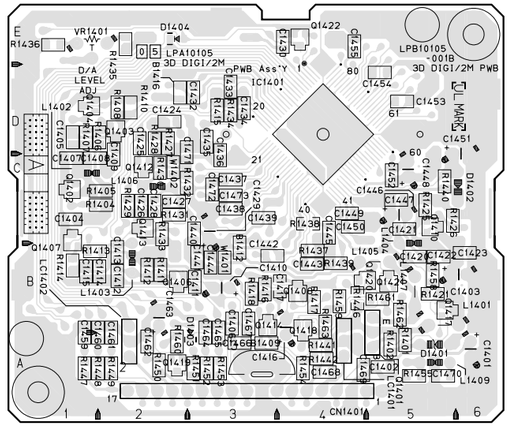
#:DIFFERENCE TABLE 3

S-JACK	J7194	R7193	R7194	C7196	D7199
S36EU S36EK S36MS	YES	NO	NO	NO	NO

NOTES:UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN μF.
ELECTROLYTIC
CERAMIC
MYLER
NON POLAR
ALL DIODES ARE 1SS133.
##:NOT USED

4.15 3D DIGITAL/2M AND S-SUB CIRCUIT BOARDS

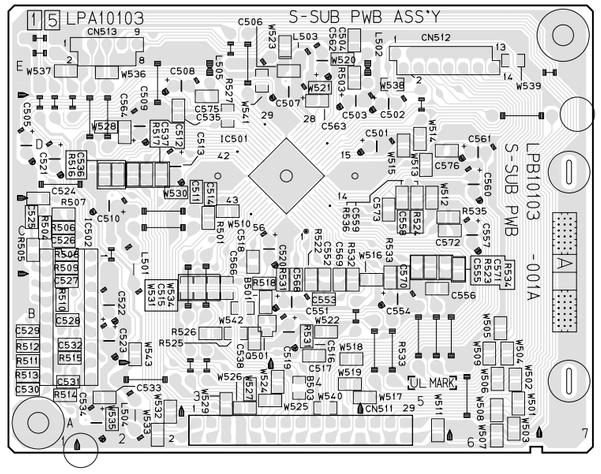
<05>3D DIGITAL/2M
LPB10105-001B



COMPONENT PARTS LOCATION GUIDE
<3D DIGITAL/2M >

REF.NO.	LOCATION		
CAPACITOR			
C1401	A	D	6A
C1402	B	C	5A
C1403	A	D	5B
C1404	B	C	1C
C1405	B	C	1D
C1406	B	C	3B
C1407	B	C	1C
C1408	B	C	1C
C1409	B	C	2C
C1410	A	D	3B
C1411	B	C	3B
C1412	B	C	2B
C1413	B	C	2B
C1414	B	C	2B
C1415	B	C	1B
C1416	A	D	4A
C1417	B	C	4B
C1420	B	C	5B
C1421	B	C	5C
C1422	B	C	5B
C1423	B	C	6B
C1424	B	C	2D
C1425	B	C	2D
C1426	B	C	2C
C1427	B	C	2C
C1428	B	C	2C
C1429	A	D	3C
C1430	B	C	4E
C1432	B	C	3D
C1433	B	C	3D
C1434	B	C	3D
C1435	B	C	3D
C1436	B	C	3C
C1437	B	C	3C
C1438	B	C	3C
C1439	B	C	3C
C1440	B	C	3C
C1441	B	C	3B
C1442	B	C	3B
C1443	B	C	4B
C1444	B	C	3B
C1445	B	C	4C
C1446	A	D	5C
C1447	B	C	5C
C1448	A	D	5C
C1449	B	C	4C
C1450	B	C	4C
C1451	A	D	5D
C1452	B	C	5C
C1453	B	C	5D
C1454	B	C	5D
C1455	B	C	4E
C1459	B	C	1B
C1460	B	C	2B
C1461	B	C	2B
C1462	B	C	2A
C1463	A	D	2B
C1464	B	C	3B
C1465	B	C	3B
C1466	B	C	3A
C1467	B	C	3B
C1468	B	C	4A
C1469	B	C	4A
C1470	B	C	5A
C1471	B	C	2D
C1472	B	C	3C
C1473	B	C	3C
CONNECTOR			
CN1401	A	D	5A
DIODE			
D1401	A	D	5A
D1402	A	D	6C
D1403	B	C	3B
D1404	B	C	2E
IC			
IC1401	B	C	4D
COIL			
L1401	A	D	5B
L1402	A	D	2C
L1403	A	D	2B
L1404	A	D	5C
L1405	A	D	4B
L1406	A	D	2C
L1407	A	D	5B
L1409	A	D	5A
TRANSISTOR			
Q1401	A	D	5B
Q1402	B	C	1C
Q1403	B	C	2D
Q1404	B	C	1D
Q1406	B	C	2B
Q1407	B	C	1C
Q1408	B	C	4B
Q1410	B	C	5C
Q1412	B	C	2C
Q1413	B	C	2C
Q1414	B	C	3B
Q1417	B	C	5B
Q1418	B	C	4B
Q1419	B	C	2A
Q1420	B	C	4B
Q1421	B	C	5B
Q1422	B	C	4E
RESISTOR			
R1401	B	C	5A
R1402	B	C	5A
R1404	B	C	2C
R1405	B	C	2C
R1406	B	C	2D
R1407	B	C	1D
R1408	B	C	2D
R1410	B	C	2D
R1411	B	C	2B
R1412	B	C	2B
R1413	B	C	1B
R1414	B	C	1B
R1415	B	C	3D
R1416	B	C	3B
R1417	B	C	4B
R1418	B	C	3B
R1421	B	C	5B
R1425	B	C	5C
R1426	B	C	5C
R1427	B	C	2D
R1428	B	C	2D
R1429	B	C	2C
R1430	B	C	2C
R1431	B	C	2C
R1432	B	C	2C
R1433	B	C	2C
R1434	B	C	3D
R1435	B	C	2E
R1436	B	C	1E
R1437	B	C	4B
R1438	B	C	4C
R1439	B	C	4B
R1440	B	C	5C
R1441	B	C	4A
R1442	B	C	4A
R1446	B	C	4B
R1447	B	C	1A
R1448	B	C	2A
R1449	B	C	2A
R1450	B	C	2A
R1451	B	C	3A
R1452	B	C	3A
R1453	B	C	3A
R1454	B	C	4A
R1455	B	C	5A
R1458	B	C	5B
R1459	B	C	4B
R1460	B	C	2A
R1461	B	C	5B
R1462	B	C	5B
R1463	B	C	4B
VR1401	A	D	1E
OTHER			
LC1401	A	D	4A
LC1402	A	D	2A

<15>S-SUB
LPB10103-001A

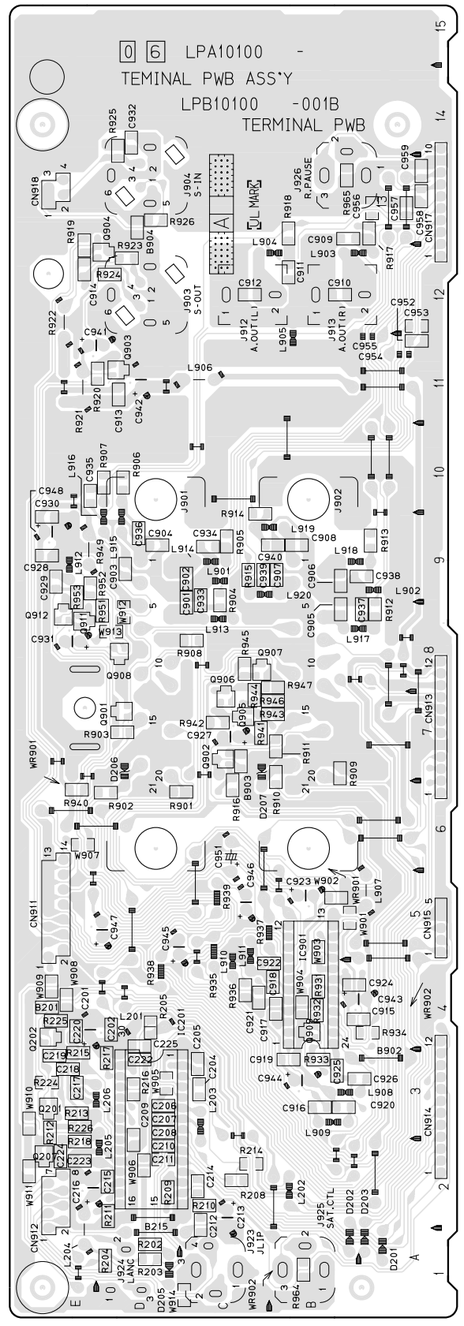


COMPONENT PARTS LOCATION GUIDE
<S-SUB >

REF.NO.	LOCATION		
CAPACITOR			
C501	A	D	5D
C502	A	D	5D
C503	A	D	4D
C504	B	C	4E
C505	A	D	1D
C506	B	C	4E
C507	A	D	4E
C508	A	D	2E
C509	A	D	2D
C510	A	D	2C
C511	B	C	3C
C512	B	C	2D
C513	A	D	2D
C514	B	C	3C
C515	B	C	3B
C516	B	C	4B
C517	B	C	4B
C518	B	C	3C
C519	A	D	4B
C520	A	D	3C
C521	A	D	1D
C522	A	D	2B
C523	A	D	2B
C524	B	C	1C
C525	B	C	1C
C526	B	C	1C
C527	B	C	1B
C528	B	C	1B
C529	B	C	1B
C530	B	C	1A
C531	B	C	1A
C532	B	C	1B
C533	B	C	2A
C534	A	D	2A
C535	B	C	2D
C536	B	C	2D
C537	B	C	2D
C538	B	C	3B
C551	A	D	4B
C552	B	C	4B
C553	B	C	4B
C554	A	D	5B
C555	B	C	5C
C556	B	C	5B
C557	A	D	6C
C558	B	C	5C
C559	B	C	5C
C560	A	D	6D
C561	A	D	6D
C562	A	D	4E
C563	B	C	4D
C564	B	C	2D
C566	B	C	3B
C568	B	C	4B
C569	B	C	4B
C570	B	C	5B
C571	B	C	5C
C572	B	C	6C
C573	B	C	5C
C575	B	C	3D
C576	B	C	5D
CONNECTOR			
CN511	A	D	3A
CN512	A	D	5E
CN513	A	D	1E
IC			
IC501	B	C	4D
IC502	A	D	1C
COIL			
L501	A	D	2B
L502	A	D	5E
L503	A	D	3E
L504	A	D	2A
L505	A	D	3E
TRANSISTOR			
Q501	B	C	3B
RESISTOR			
R501	B	C	3C
R503	B	C	4E
R504	B	C	1C
R505	B	C	1C
R506	B	C	1C
R507	B	C	1C
R509	B	C	1C
R510	B	C	1B
R511	B	C	1B
R512	B	C	1B
R513	B	C	1A
R514	B	C	1A
R515	B	C	1B
R516	B	C	2D
R517	B	C	2D
R518	B	C	3B
R522	B	C	4B
R523	B	C	5C
R524	B	C	5C
R525	B	C	3B
R526	B	C	3B
R527	B	C	3D
R531	B	C	4B
R532	B	C	4B
R533	B	C	5B
R534	B	C	6C
R535	B	C	5C
R536	B	C	5C

4.16 TERMINAL CIRCUIT BOARD

<06>TERMINAL
LPB10100-001B

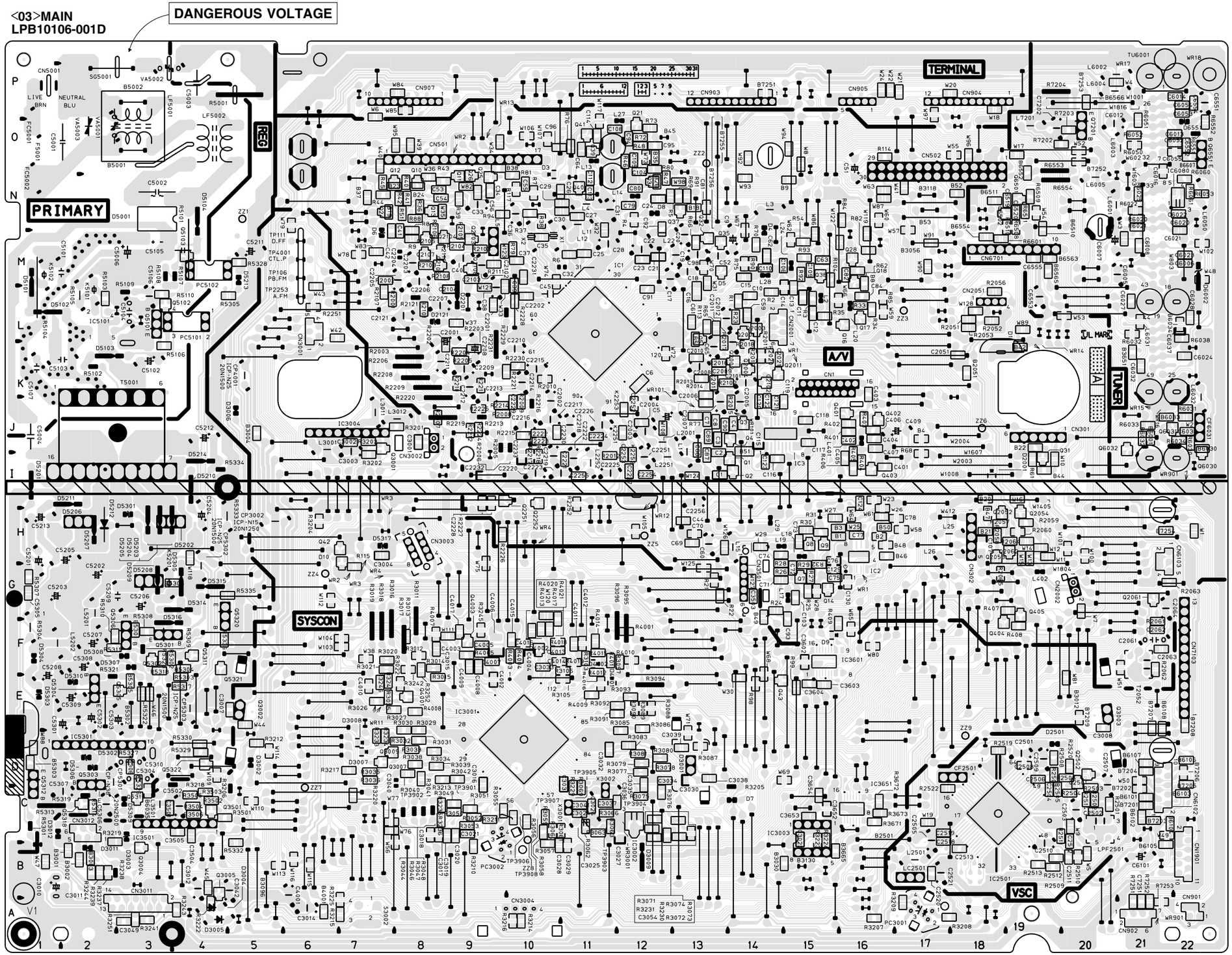


COMPONENT PARTS LOCATION GUIDE <TERMINAL>

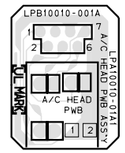
REF.NO.	LOCATION		
CAPACITOR			
C201	A	D	4E
C202	B	C	4D
C204	B	C	3C
C205	B	C	3C
C206	B	C	3D
C207	B	C	3D
C208	B	C	3D
C209	B	C	2D
C210	B	C	2D
C211	B	C	2D
C212	B	C	2C
C213	A	D	2C
C214	B	C	2C
C215	B	C	2D
C216	A	D	2E
C217	B	C	3E
C218	B	C	3E
C219	B	C	3E
C220	B	C	4E
C222	B	C	3D
C223	B	C	2E
C224	B	C	2E
C225	B	C	4D
C901	B	C	8D
C902	B	C	9D
C903	B	C	9D
C904	B	C	9D
C905	B	C	8B
C906	B	C	9B
C907	B	C	9C
C908	B	C	9B
C909	B	C	13B
C910	B	C	12B
C911	B	C	12B
C912	B	C	12C
C913	B	C	11D
C914	B	C	12E
C915	B	C	4B
C916	B	C	3B
C917	B	C	4C
C918	B	C	4C
C919	B	C	3B
C920	B	C	3B
C921	B	C	4C
C922	B	C	4C
C923	A	D	5B
C924	B	C	4B
C925	B	C	3B
C926	B	C	3B
C927	A	D	7C
C928	B	C	9E
C929	B	C	9E
C930	B	C	9E
C931	A	D	8E
C932	B	C	14D
C933	B	C	9C
C934	B	C	9C
C935	B	C	10E
C936	B	C	9D
C937	B	C	8B
C938	B	C	9B
C939	B	C	9C
C940	B	C	9C
C941	A	D	11E
C942	A	D	11D
C943	A	D	4B
C944	A	D	3B
C945	A	D	5D
C946	A	D	5C
C947	A	D	5D
C948	A	D	9E
C951	A	D	5C
C952	B	C	11A
C953	B	C	12A
C954	A	D	11A
C955	A	D	11A
C956	B	C	13A
C957	B	C	13A
C958	B	C	13A
C959	B	C	13A
CONNECTOR			
CN911	A	D	5E
CN912	A	D	2E
CN913	A	D	6A
CN914	A	D	2A
CN915	A	D	5A
CN917	A	D	12A
CN918	A	D	13E
DIODE			
D201	A	D	1A
D202	A	D	1B
D203	A	D	1B
D205	A	D	1D
D206	A	D	7D
D207	A	D	7C
IC			
IC201	A	D	3D
IC901	A	D	4B
JACK			
J901	A	D	8D
J902	A	D	8B
J903	A	D	12D
J904	A	D	13D
J912	A	D	12C
J913	A	D	12B
J923	A	D	1C
J924	A	D	1D
J925	A	D	1B
J926	A	D	13B
COIL			
L201	A	D	4D
L202	A	D	2B
L203	A	D	3C
L204	A	D	2E
L205	A	D	3E
L206	A	D	3E
L901	A	D	9C
L902	A	D	9B
L903	A	D	12A
L904	A	D	12B
L905	A	D	11C
L906	A	D	11B
L907	A	D	5B
L908	A	D	3B
L909	A	D	4C
L910	A	D	5E
L911	A	D	9E
L912	A	D	8C
L913	A	D	9C
L914	A	D	10D
L915	A	D	10D
L916	A	D	10D
L917	A	D	8A
L918	A	D	9A
L919	A	D	9B
L920	A	D	9B
TRANSISTOR			
Q201	B	C	3E
Q202	B	C	4E
Q207	B	C	2E
Q901	B	C	7D
Q902	B	C	7C
Q903	B	C	11D
Q904	B	C	12D
Q905	B	C	7C
Q906	B	C	7C
Q907	B	C	8C
Q908	B	C	8D
Q909	B	C	4B
Q911	B	C	8E
Q912	B	C	8E
RESISTOR			
R202	B	C	1D
R203	B	C	1D
R204	B	C	1D
R205	B	C	4D
R208	B	C	2C
R209	B	C	2D
R210	B	C	2C
R211	B	C	2D
R212	B	C	3E
R213	B	C	3E
R214	B	C	2C
R215	B	C	3E
R216	B	C	3D
R217	B	C	3D
R218	B	C	2E
R224	B	C	3E
R225	B	C	4E
R226	B	C	3E
R901	B	C	6D
R902	B	C	6D
R903	B	C	7D
R904	B	C	9C
R905	B	C	9C
R906	B	C	10D
R907	B	C	10D
R908	B	C	8C
R909	B	C	7B
R910	B	C	7C
R911	B	C	7C
R912	B	C	8A
R913	B	C	9A
R914	B	C	9C
R915	B	C	9C
R916	B	C	6C
R917	B	C	13A
R918	B	C	13B
R919	B	C	12E
R920	B	C	11E
R921	A	D	11E
R922	A	D	12E
R923	B	C	12D
R924	B	C	12D
R925	B	C	14D
R926	B	C	13D
R931	B	C	4B
R932	B	C	4B
R933	B	C	3B
R934	B	C	4B
R935	A	D	5C
R936	B	C	4C
R937	A	D	5C
R938	A	D	4D
R939	A	D	5C
R940	B	C	6E
R941	B	C	7C
R942	B	C	7C
R943	B	C	7C
R944	B	C	7C
R945	B	C	8C
R946	B	C	7C
R947	B	C	8C
R949	A	D	9E
R951	B	C	8D
R952	B	C	9E
R953	B	C	9E
R964	B	C	1B
R965	B	C	13B
OTHER			
WR901	A	D	5B
WR902	A	D	4A

4.17 MAIN, A/C HEAD, AUDIO ERASE AND LOADING MOTOR CIRCUIT BOARDS

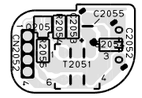
<03>MAIN
LPB10106-001D



<12>A/C HEAD
LPB10010-001A



<46>AUDIO ERASE
LPB10106-001D



<55>LOADING MOTOR
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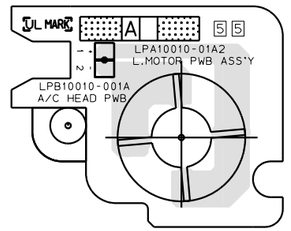


COMPONENT PARTS LOCATION GUIDE <MAIN>

REF.NO.	LOCATION		
CAPACITOR			
C1	B	C	13I
C2	B	C	13I
C3	B	C	13J
C4	B	C	14J
C5	A	D	13J
C6	B	C	12K
C7	B	C	13J
C8	B	C	13J
C9	A	D	14M
C10	B	C	14L
C11	B	C	15L
C12	B	C	15L
C13	B	C	15L
C14	B	C	15L
C15	B	C	14M
C16	B	C	13L
C17	A	D	12M
C18	A	D	13M
C19	A	D	13M
C20	A	D	13M
C21	B	C	12M
C22	A	D	12M
C23	B	C	12M
C24	B	C	12N
C25	B	C	11M
C26	B	C	10N
C27	B	C	11N
C28	A	D	11M
C29	B	C	11N
C30	B	C	11N
C31	A	D	11N
C32	A	D	11M
C33	A	D	9N
C34	B	C	9N
C35	B	C	10M
C36	A	D	10N
C37	B	C	10M
C38	A	D	9L
C39	B	C	10M
C40	A	D	9M
C41	B	C	8M
C42	B	C	7M
C44	B	C	13H
C45	A	D	10L
C51	A	D	16N
C52	A	D	13M
C53	B	C	8N
C54	B	C	8N
C55	B	C	10N
C56	B	C	9N
C59	B	C	14L
C60	A	D	13H
C61	B	C	13L
C62	B	C	14M
C63	B	C	15M
C64	B	C	11O
C65	A	D	13K
C69	B	C	13H
C70	B	C	13H
C71	B	C	14G
C72	B	C	15G
C73	B	C	15H
C74	B	C	14H
C75	B	C	15G
C76	B	C	15H
C77	B	C	16H
C78	B	C	17H
C79	B	C	12N
C80	B	C	12N
C81	B	C	13N
C82	B	C	16M
C84	B	C	16L
C87	B	C	13I
C88	B	C	13J
C89	B	C	13J
C90	B	C	13J
C91	B	C	12L
C92	B	C	12N
C93	B	C	15G
C94	B	C	12O
C95	B	C	12O
C96	B	C	10O
C98	A	D	13M
C103	B	C	15G
C104	B	C	12O
C105	B	C	12O
C106	B	C	15M
C107	B	C	18H
C108	B	C	11O
C109	B	C	15M
C110	B	C	14M
C112	B	C	11N
C113	B	C	11N
C114	B	C	11O
C115	B	C	14J
C116	B	C	14I
C117	B	C	15J
C118	B	C	15J
C119	B	C	15J
C120	B	C	14J
C121	B	C	14J
C122	B	C	14J
C123	B	C	14I
C124	B	C	16I
C129	B	C	15G
C130	B	C	16G
C401	B	C	16I
C402	B	C	16J
C403	B	C	16K
C404	B	C	16J
C405	B	C	16I
C406	B	C	16J
C407	B	C	16J
C409	A	D	16J

REF.NO.	LOCATION		
C2001	A	D	9K
C2002	A	D	10K
C2003	A	D	12J
C2004	B	C	12J
C2005	A	D	14J
C2006	B	C	13J
C2007	A	D	13J
C2008	A	D	13K
C2009	B	C	13K
C2010	B	C	13K
C2011	A	D	14L
C2012	A	D	13L
C2013	B	C	13K
C2021	B	C	14K
C2051	B	C	18K
C2061	A	D	21F
C2062	B	C	21F
C2063	B	C	21F
C2064	A	D	21G
C2101	A	D	14K
C2102	A	D	9M
C2103	B	C	9M
C2104	B	C	9L
C2121	A	D	8L
C2201	B	C	9L
C2202	B	C	10L
C2203	A	D	8M
C2204	A	D	8M
C2205	A	D	8M
C2206	A	D	8M
C2207	A	D	8L
C2208	A	D	9K
C2209	A	D	9K
C2210	A	D	10K
C2211	A	D	8K
C2212	A	D	9K
C2213	A	D	9J
C2214	A	D	10K
C2215	A	D	10K
C2216	A	D	10J
C2217	A	D	10J
C2218	A	D	11J
C2219	A	D	10J
C2220	A	D	10I
C2221	B	C	11I
C2222	A	D	11I
C2223	A	D	11I
C2224	B	C	11J
C2225	A	D	11I
C2226	A	D	11J
C2227	B	C	12I
C2228	B	C	9I
C2229	B	C	10J
C2230	B	C	10J
C2231	B	C	10M
C2232	B	C	9I
C2233	B	C	10I
C2251	A	D	12J
C2252	B	C	12J
C2253	B	C	12I
C2254	B	C	12I
C2255	B	C	11I
C2256	A	D	13I
C2501	A	D	19D
C2502	B	C	20C
C2503	A	D	20C
C2504	B	C	19C
C2505	A	D	17B
C2506	B	C	19D
C2507	A	D	20D
C2508	B	C	19D
C2509	A	D	19D
C2510	A	D	19B
C2511	B	C	20B
C2512	B	C	20C
C2513	B	C	18B
C2518	B	C	17C
C2519	B	C	17C
C2520	B	C	17B
C2521	A	D	17B
C3001	B	C	8J
C3002	B	C	7J
C3003	A	D	7J
C3004	B	C	7H
C3007	B	C	5E
C3008	B	C	20E
C3010	A	D	1B
C3011	A	D	1B
C3012	A	D	4B
C3014	A	D	6A
C3015	B	C	8F
C3016	B	C	9D
C3017	B	C	8C
C3018	B	C	8C
C3019	B	C	8C
C3020	B	C	9C
C3021	B	C	9C
C3022	B	C	15C
C3024	B	C	11C
C3025	A	D	11C
C3026	B	C	11C
C3027	B	C	12C
C3028	B	C	10B
C3029	B	C	11B
C3030	B	C	13D
C3031	B	C	11D
C3032	B	C	11D
C3033	B	C	10F
C3034	B	C	12D
C3035	B	C	12D
C3036	B	C	12C
C3037	B	C	11C
C3038	B	C	13D
C3039	B	C	13D
C3040	A	D	8D

REF.NO.	LOCATION		
C3041	B	C	11C
C3042	A	D	5B
C3049	B	C	3A
C3054	B	C	12C
C3501	B	C	3C
C3502	A	D	4C
C3503	B	C	14G
C3504	B	C	4C
C3505	B	C	4C
C3602	B	C	15F
C3603	B	C	15E
C3604	B	C	15E
C3652	B	C	15C
C3653	B	C	15C
C3654	B	C	15C
C4001	A	D	6B
C4002	B	C	9E
C4003	B	C	9F
C4004	B	C	10F
C4005	B	C	9F
C4006	B	C	9F
C4007	B	C	9F
C4008	B	C	9F
C4009	B	C	9F
C4010	B	C	7E
C4011	B	C	11F
C4012	B	C	11F
C4013	B	C	10F
C4014	B	C	10F
C4015	B	C	10F
C4016	B	C	10F
C4017	B	C	9F
C5001	A	D	2O
C5002	A	D	4N
C5003	A	D	4P
C5004	A	D	1J
C5006	A	D	3M
C5101	A	D	2M
C5102	A	D	3K
C5103	A	D	1K
C5104	A	D	3L
C5105	A	D	3M
C5106	A	D	3L
C5107	A	D	1K
C5201	A	D	1G
C5202	A	D	2G
C5203	A	D	1G
C5204	A	D	4H
C5205	A	D	2H
C5206	A	D	3G
C5207	A	D	2F
C5208	A	D	1E
C5209	A	D	3G
C5211	A	D	5M
C5212	A	D	4J
C5213	A	D	1H
C5301	A	D	2D
C5302	A	D	2E
C5303	A	D	3E
C5304	A	D	3D
C5305	B	C	1G
C5306	A	D	2C
C5307	A	D	2C
C5308	A	D	2F
C5309	A	D	2E
C5310	A	D	3D
C6005	A	D	21M
C6006	B	C	22M
C6007	A	D	20M
C6008	B	C	21M
C6012	A	D	21O
C6013	B	C	22O
C6014	B	C	22P
C6016	B	C	21O
C6020	B	C	22N
C6021	B	C	22M
C6022	B	C	22N
C6023	B	C	22M
C6024	B	C	22K
C6027	B	C	21L
C6028	B	C	22L
C6032	B	C	21K
C6033	B	C	22J
C6037	B	C	22L
C6052	B	C	22O
C6053	B	C	22P
C6054	B	C	22P
C6055	B	C	22O
C6101	A	D	21B
C6519	B	C	19N
C6520	B	C	19N
C6551	A	D	22P
C6552	B	C	22O
C6553	A	D	19L
C6554	B	C	22P
C6555	B	C	19M
C7202	A	D	19O
C7251	B	C	21A
CONNECTOR			
CN1	A	D	15K
CN301	A	D	20J
CN302	A	D	18H
CN501	A	D	7O
CN502	A	D	18O
CN901	A	D	22A
CN902	A	D	21A
CN903	A	D	14P
CN904	A	D	19P
CN905	A	D	16P
CN907	A	D	8P
CN1901	A	D	22C
CN2001	A	D	14L
CN2002	A	D	20G
CN2051	A	D	18L

REF.NO.	LOCATION		
CN3001	A	D	6L
CN3002	A	D	8J
CN3003	A	D	8H
CN3004	A	D	10A
CN3011	A	D	3A
CN3012	A	D	2C
CN3501	A	D	14H
CN5001	A	D	1P
CN6102	A	D	21C
CN6103	A	D	21H
CN6701	A	D	18M
CN7103	A	D	22E
DIODE			
D1	B	C	19K
D3	B	C	10O
D4	A	D	14M
D5	B	C	13M
D6	A	D	7N
D7	A	D	13C
D8	A	D	12N
D9	B	C	15F
D10	B	C	7H
D2001	B	C	18I
D2121	A	D	8L
D2201	A	D	9M
D2501	A	D	20D
D3001	A	D	13D
D3002	A	D	5D
D3003	A	D	3B
D3004	A	D	4A
D3005	A	D	4A
D3006	A	D	5J
D3007	B	C	7D
D3008	B	C	7D
D3009	A	D	12B
D3011	A	D	2B
D3012	A	D	1C
D4001	B	C	11E
D4002	B	C	11F
D5001	B	C	3N
D5101	A	D	1L
D5102	A	D	2L
D5103	A	D	2K
D5104	A	D	4N
D5201	A	D	1I
D5202	A	D	4H
D5203	A	D	4I
D5204	A	D	3I
D5205	A	D	3I
D5206	A	D	2H
D5207	A	D	2H
D5208	A	D	3G
D5209	A	D	3H
D5210	A	D	4I
D5211	A	D	1I
D5212	A	D	2I
D5213	A	D	5L
D5214	A	D	4I
D5301	A	D	3H
D5302	A	D	2D
D5303	A	D	1E
D5304	A	D	1F
D5305	A	D	4G
D5306	A	D	2D
D5307	A	D	3F
D5308	A	D	2F
D5309	A	D	3C
D5310	A	D	2E
D5314	A	D	3G
D5315	A	D	5G
D5316	A	D	3F
D5317	A	D	7H
D6002	A	D	22L
D6551	A	D	22O
IC			
IC1	B	C	11L
IC2	B	C	16H
IC3	B	C	14J
IC2501	B	C	18C
IC3001	B	C	10D
IC3002	B	C	12C
IC3003	A	D	15C
IC3004	A	D	7J
IC3501	A	D	4C
IC3601	B	C	15F
IC3651	B	C	16C
IC5101	A	D	2L
IC5301	A	D	1D
IC6080	B	C	22N
COIL			
L1	A	D	13J
L2	A	D	15L
L3	A	D	14N
L4	A	D	11N
L5	A	D	9M
L11	A	D	11N
L12	A	D	11M
L13	A	D	11O
L14	A	D	12N
L15	A	D	14H
L17	A	D	15G
L18	A	D	15H
L19	A	D	15H
L20	A	D	16L
L22	A	D	12M
L24	A	D	15M
L25	A	D	18H
L26	A	D	18H
L27	A	D	12O
L28	A	D	14M
L29	A	D	14H
L401	A	D	16J
L402	A	D	19G

REF.NO.	LOCATION		
L2001	A	D	12J
L2251	A	D	13I
L2252	A	D	11I
L2501	A	D	17B
L3001	A	D	6J
L3011	A	D	7J
L3012	A	D	7J
L3501	A	D	3C
L5201	A	D	2G
L5202	A	D	1F
L6001	A	D	20N
L6002	A	D	21P
L6003	A	D	21O
L6004	A	D	20P
L6005	A	D	20N
L6031	B	C	21L
L6032	A	D	22J
L6050	A	D	22N
L7201	A	D	19O
TRANSISTOR			
Q1	B	C	14I
Q2	B	C	14I
Q3	B	C	14J
Q4	B	C	14J
Q5	B	C	13L
Q7	B	C	15G
Q8	B	C	15H
Q9	B	C	15H
Q10	B	C	8N
Q11	B	C	9N
Q12	B	C	8N
Q13	B	C	8N
Q14	B	C	15G
Q16	B	C	16L
Q17	B	C	16L
Q18	B	C	16M
Q21	B	C	12O
Q24	B	C	7N
Q25	B	C	9N
Q26	B	C	9N
Q28	B	C	16M
Q31	B	C	19I
Q32	B	C	13M
Q34	B	C	12N
Q35	B	C	13M
Q37	B	C	13N
Q38	B	C	15M
Q39	B	C	11O
Q40	B	C	11N
Q41	B	C	11O
Q42	B	C	7H
Q43	B	C	14E
Q401	B	C	16J
Q402	B	C	16J
Q403	B	C	16I
Q404	B	C	18F
Q405	B	C	19G
Q2001	B	C	14L
Q2002	B	C	14K
Q2003	B	C	14L
Q2004	B	C	14K
Q2011	B	C	14K
Q2052	B	C	18H
Q2053	B	C	18H
Q2054	B	C	19H
Q2061	B	C	21G
Q2062	B	C	19H
Q2102	B	C	14K
Q2103	B	C	9M
Q2104	B	C	8M
Q2105	B	C	8M
Q2106	B	C	8M
Q2107	B	C	8M
Q2108	B	C	9M
Q2251	B	C	10I
Q2252	B	C	10I
Q2501	B	C	20D
Q2502	B	C	20D
Q3001	B	C	7J
Q3002	A	D	5E
Q3003	A	D	20E
Q3004	B	C	3B
Q3005	B	C	4B
Q3007	B	C	7D
Q3009	B	C	7D
Q3501	B	C	4C
Q4001	B	C	8E
Q4002	B	C	10F
Q4003	B	C	9F
Q5101	A	D	3L
Q5102	B	C	3L
Q5103	B	C	4M
Q5301	A	D	3F
Q5302	B	C	3F
Q5303	A	D	2D
Q5304	A	D	2E
Q5305	B	C	3E
Q5306	A	D	3F
Q5310	B	C	3C
Q5311	B	C	4F
Q5312	A	D	1D
Q5318	B	C	2C
Q5320	A	D	4G
Q5321	B	C	4F
Q5322	B	C	4D
Q6030	B	C	22I
Q6031	B	C	22J
Q6032	B	C	21J
Q6501	B	C	19N
Q6502	B	C	18N
Q6551	A	D	22O
Q7201	A	D	20P
RESISTOR			
R1	B	C	14L

REF.NO.	LOCATION		
R2	B	C	14L
R3	B	C	15L
R4	B	C	12N
R5	B	C	12N
R6	B	C	11M
R7	B	C	10N
R8	B	C	8M
R9	B	C	8M
R21	B	C	13G
R22	B	C	13G
R23	B	C	14L
R24	B	C	14G
R25	B	C	15G
R26	B	C	14G
R27	B	C	15G
R28	B	C	14H
R29	B	C	15G
R30	B	C	15H
R31	B	C	15H
R32	B	C	15G
R33	B	C	16L
R34	B	C	16L
R35	B	C	15L
R36	B	C	8N
R37	B	C	10N
R38	B	C	10N
R39	B	C	9N
R40	B	C	8N
R41	B	C	8N
R42	B	C	8N
R43	B	C	8N
R44	B	C	7N
R45	B	C	7N
R46	B	C	12O
R47	B	C	12N
R48	B	C	12O
R51	B	C	8N
R54	B	C	15M
R61	B	C	19I
R62	B	C	16M
R65	B	C	13L
R66	B	C	13M
R68	B	C	17I
R69	B	C	13N
R70	B	C	14M
R72	B	C	12O
R73	B	C	12O
R75	B	C	14M
R76	B	C	11O
R77	B	C	13J
R79	B	C	10M
R80	B	C	12O
R81	B	C	10N
R82	B	C	16M
R84	B	C	16N
R85	B	C	16L
R88	B	C	8N
R90	B	C	14M
R91	B	C	13N
R92	B	C	15M
R93	B	C	15M
R94	B	C	9N
R98	B	C	14E
R99	B	C	15E
R104	B	C	15M
R113	B	C	13L
R114	B	C	16O
R115	B	C	7G
R117	B	C	10N
R401	B	C	16J
R402	B	C	16J
R403	B	C	16J
R404	B	C	16I
R405	B	C	16I
R406	B	C	16I
R407	B	C	19G
R408	B	C	19F
R409	B	C	15F
R2001	B	C	7L
R2002	B	C	7M
R2003	A	D	7K
R2005	A	D	9I
R2006	A	D	10I
R2007	B	C	8J
R2008	B	C	9J
R2009	B	C	10J
R2010	B	C	10K
R2011	B	C	14K
R2012	B	C	11I
R2013	B	C	13K
R2014	B	C	13K
R2015	B	C	14J
R2016	B	C	13K
R2017	B	C	13K
R2018	B	C	14K
R2019	B	C	14K
R2020	B	C	14K
R2051	B	C	18L
R2052	B	C	18L
R2053	B	C	18L
R2056	B	C	18L
R2057	B	C	18H
R2058	B	C	18H
R2059	B	C	19H
R2060	B	C	19H
R2061	B	C	21F
R2062	B	C	21F
R2063	B	C	21G
R2064	B	C	19H
R2065	B	C	18G
R2102	B	C	13K
R2103	B	C	9M
R2104	B	C	9M
R2105	B	C	9M
R2106	B	C	8M

REF.NO.	LOCATION		
R2107	B	C	7L
R2108	B	C	8M
R2109	B	C	8M
R2110	B	C	8M
R2111	B	C	9M
R2121	A	D	8L
R2202	B	C	8K
R2203	B	C	9K
R2204	B	C	9K
R2205	B	C	9K
R2206	A	D	7K
R2208	A	D	8K
R2209	A	D	8K
R2210	B	C	9K
R2211	B	C	9K
R2212	B	C	9J
R2213	A	D	9J
R2214	B	C	9J
R2215	B	C	10J
R2216	A	D	10J
R2217	B	C	10I
R2218	B	C	10I
R2219	A	D	9J
R2220	A	D	9J
R2221	B	C	10K
R2222	B	C	10J
R2223	B	C	10J
R2224	B	C	9J
R2225	B	C	9J
R2226	B	C	9H
R2227	B	C	9I
R2228	B	C	10L
R2229	A	D	10L
R2230	B	C	10K
R2231	A	D	9L
R2251	B	C	6L
R2252	B	C	11I
R2501	B	C	20C
R2502	B	C	20C
R2503	B	C	20C
R2504	B	C	20C
R2505	B	C	19C
R2506	B	C	20D
R2507	B	C	19D
R2508	B	C	19D
R2509	B	C	19B
R2510	B	C	20B
R2511	B	C	19C
R2512	B	C	19B
R2513	B	C	19B
R2514	B	C	20C
R2519	B	C	18D
R2520	B	C	20D
R2522	B	C	17C
R3011	A	D	8F
R3012	B	C	8F
R3013	B	C	8F
R3014	B	C	8F
R3015	B	C	8E
R3016	A	D	7F
R3017	A	D	8F
R3018	A	D	7F
R3019	A	D	7F
R3020	B	C	7F
R3021	B	C	7F
R3022	B	C	8E
R3025	B	C	7E
R3026	B	C	7E
R3027	B	C	7E
R3029	B	C	8E
R3030	B	C	8E
R3031	B	C	8D
R3032	B	C	8D
R3033	B	C	8D
R3034	B	C	8D
R3035	B	C	7D
R3036	B	C	7D
R3038	B	C	8D
R3039	B	C	8D
R3040	B	C	8D
R3041	B	C	8D
R3042	B	C	9D
R3044	A	D	8C
R3046	A	D	8C
R3047	A	D	8C
R3048	A	D	8C
R3049	B	C	9C
R3050	B	C	9C
R3051	B	C	9C
R3052	B	C	9C
R3053	B	C	9C
R3054	B	C	10C
R3055	B	C	9C
R3056	B	C	10C
R3057	B	C	10B
R3058	B	C	10C
R3059	B	C	10C
R3060	B	C	10C
R3061	B	C	11C
R3062	B	C	11C
R3063	B	C	11C
R3066	B	C	11C
R3069	B	C	11C
R3071	B	C	12C
R3072	B	C	13C
R3073	B	C	13C
R3074	B	C	13C
R3075	B	C	12C
R3076	B	C	12C
R3077	B	C	12D
R3078	B	C	12D
R3079	B	C	12D
R3080	B	C	12D
R3081	B	C	12D
R3083	B	C	12D

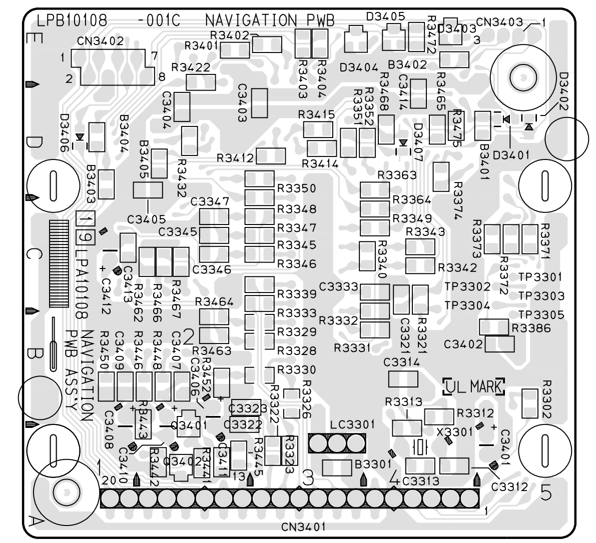
REF.NO.	LOCATION		
R3085	B	C	12D
R3086	B	C	12E
R3087	B	C	13D
R3088	B	C	12E
R3089	B	C	12E
R3090	B	C	12E
R3091	B	C	12E
R3092	B	C	12E
R3093	B	C	12E
R3094	A	D	12E
R3095	A	D	12F
R3096	A	D	12F
R3097	B	C	12F
R3103	B	C	11F
R3105	B	C	11E
R3106	B	C	11F
R3201	B	C	8J
R3202	B	C	7I
R3203	B	C	7J
R3204	B	C	6H
R3205	A	D	14C
R3206	A	D	5C
R3207	B	C	16A
R3208	B	C	17A
R3209	B	C	17A
R3210	B	C	9B
R3211	B	C	9C
R3212	B	C	5D
R3213	B	C	8D
R3214	B	C	10A
R3215	B	C	7A
R3216	B	C	10A
R3217	B	C	7D
R3218	A	D	4D
R3219	B	C	2B
R3220	B	C	7C
R3222	B	C	4A
R3223	B	C	15C
R3224	B	C	15C
R3225	B	C	7A
R3229	B	C	11C
R3230	B	C	12C
R3231	B	C	12C
R3233	B	C	7D
R3234	B	C	7D
R3235	B	C	8C
R3236	B	C	8C
R3237	B	C	2B
R3238	A	D	2B
R3239	B	C	2B
R3241	B	C	3A
R3242	B	C	8F
R3243	B	C	4A
R3244	B	C	2B
R3245	B	C	9F
R3246	B	C	7E
R3247	B	C	7E
R3251	B	C	3A
R3252	B	C	8F
R3501	B	C	4C
R3502	B	C	4C
R3503	B	C	4C
R3504	B	C	4C
R3505	B	C	4C
R3506	B	C	4C
R3671	B	C	16C
R3672	B	C	16C
R3673	B	C	16C
R4001	B	C	12F
R4003	B	C	10F
R4004	B	C	10F
R4005	B	C	9F
R4007	B	C	8F
R4008	B	C	8E
R4009	B	C	11E
R4010	B	C	12F
R4011	B	C	11F
R4012	B	C	11F
R4013	B	C	10F
R4014	B	C	11F
R4015	B	C	11F
R4016	B	C	11E
R4017	B	C	10F
R4018	B	C	10F
R4019	B	C	11F
R4020	B	C	10G
R4021	B	C	10G
R5001	A	D	4P
R5101	A	D	4N
R5102	A	D	2K
R5103	B	C	2L
R5104	A	D	1L
R5105	A	D	2L
R5106	B	C	3K
R5107	A	D	4M
R5108	A	D	3M
R5109	A	D	3L
R5110	B	C	3L
R5301	A	D	1C
R5302	B	C	3F
R5303	B	C	4E
R5304	A	D	1G
R5305	B	C	5L
R5306	B	C	3D
R5307	B	C	1G
R5308	B	C	3F
R5309	A	D	3F
R5310	B	C	2F
R5311	B	C	2F
R5313	A	D	1C
R5314	B	C	2C
R5317	B	C	4E
R5318	B	C	3F
R5319	A	D	2C
R5321	A	D	3E

REF.NO.	LOCATION		
R5322	B	C	3E
R5323	B	C	3F
R5326	B	C	3D
R5327	B	C	3D
R5328	B	C	5M
R5329	B	C	4D
R5330	B	C	4D
R5332	B	C	5B
R5333	A	D	4H
R5334	A	D	5I
R5335	B	C	5G
R5336	B	C	4F
R6020	B	C	21N
R6021	B	C	21N
R6022	B	C	21N
R6025	B	C	21N
R6030	B	C	22J
R6031	B	C	22J
R6032	B	C	21L
R6033	B	C	21J
R6034	B	C	22J
R6038	B	C	22L
R6050	B	C	21O
R6051	B	C	21O
R6052	B	C	21O
R6053	B	C	22N
R6060	B	C	22N
R6061	B	C	22N
R6508	B	C	19N
R6509	B	C	19N
R6510	B	C	19N
R6511	B	C	19N
R6551	A	D	22O
R6552	B	C	22O
R6553	A	D	20O
R6554	A	D	20N
R6601	B	C	18M
R7202	B	C	20O
R7203	B	C	20O
R7204	A	D	19P
R7251	B	C	21A
R7252	B	C	21A
R7253	B	C	21A
TESTPOINT			
TP106	A	D	6M
TP111	A	D	6M
TP2253	A	D	6L
TP3901	B	C	9C
TP3902	B	C	8C
TP3903	B	C	11C
TP3904	B	C	12C
TP3905	B	C	11C
TP3906	B	C	10C
TP3907	B	C	10C
TP3908	B	C	10C
TP4001	A	D	6M
OTHER			
CF2501	A	D	17D
CF6031	A	D	22J
CP3002	A	D	6H
CP4001	A	D	5K
CP5301	A	D	2D
CP5302	A	D	4H
CP5303	A	D	4E
F5001	A	D	1P
FC5001	A	D	1P
FC5002	A	D	1N
K2251	B	C	12J
K2252	B	C	12I
K2253	B	C	12J
K5101	A	D	2L
K5102	A	D	1M
K5201	A	D	3G
LC2501	A	D	17B
LF5001	A	D	2P
LF5002	A	D	5O
LPF2501	A	D	20C
PC3001	A	D	17A
PC3002	A	D	9C
PC5101	A	D	4L
PC5102	A	D	5M
S3002	A	D	7A
SG5001	A	D	2P
T2052	A	D	21F
T5001	A	D	2J
TU6001	A	D	21P
VA5001	A	D	2P
VA5002	A	D	4P
VA5003	A	D	2P
WR1	A	D	16G
WR2	A	D	7G
WR3	A	D	7G
WR4	A	D	7G
WR11	A	D	7E
WR15	A	D	21J
WR16	A	D	21J
WR17	A	D	21P
WR18	A	D	22Q
WR101	A	D	14J
WR901	A	D	21A
WR3001	A	D	12C
X1	A	D	10N
X2	A	D	10M
X3001	A	D	11C
X3002	A	D	11C

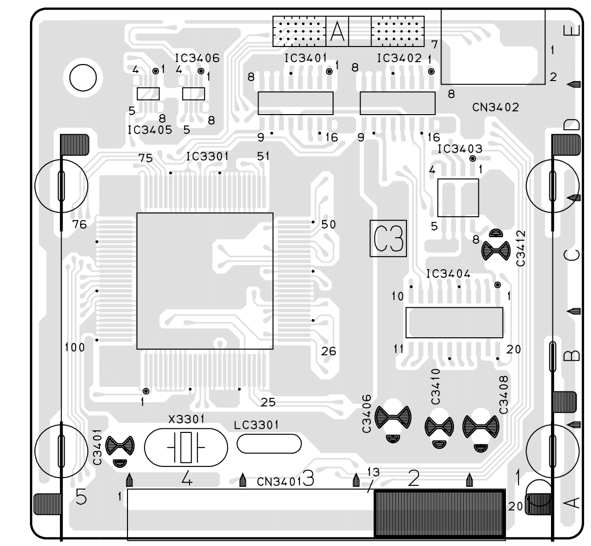
4.18 NAVIGATION CIRCUIT BOARD

<19>NAVIGATION LPB10108-001C

– FOIL SIDE(B) –



– COMPONENT SIDE(A) –



COMPONENT PARTS LOCATION GUIDE <NAVIGATION>

REF.NO.	LOCATION		
CAPACITOR			
C3312	B	C	4A
C3313	B	C	4A
C3314	B	C	4B
C3321	B	C	4C
C3322	B	C	2B
C3323	B	C	2B
C3333	B	C	4C
C3345	B	C	2C
C3346	B	C	2C
C3347	B	C	2C
C3401	A	D	5A
C3402	B	C	5B
C3403	B	C	3D

REF.NO.	LOCATION		
C3404	B	C	2D
C3405	B	C	2D
C3406	A	D	2B
C3407	B	C	2B
C3408	A	D	1B
C3409	B	C	1B
C3410	A	D	2B
C3411	B	C	2A
C3412	A	D	1C
C3413	B	C	1C
C3414	B	C	4D
CONNECTOR			
CN3401	A	D	4A
CN3402	A	D	1E

REF.NO.	LOCATION		
DIODE			
D3401	B	C	5D
D3402	B	C	5D
D3403	B	C	4E
D3404	B	C	3E
D3405	B	C	4E
D3406	B	C	1D
D3407	B	C	4D
IC			
IC3301	A	C	4C
IC3401	A	C	3D
IC3402	A	C	2D
IC3403	A	C	2D
IC3404	A	C	2B

REF.NO.	LOCATION		
IC3405	A	C	4D
IC3406	A	C	4D
TRANSISTOR			
Q3401	B	C	2B
Q3402	B	C	2A
RESISTOR			
R3302	B	C	5B
R3312	B	C	4B
R3313	B	C	4A
R3321	B	C	4C
R3322	B	C	3A
R3323	B	C	3A
R3326	B	C	3B

REF.NO.	LOCATION		
R3328	B	C	3B
R3329	B	C	3B
R3330	B	C	3B
R3331	B	C	4B
R3332	B	C	4C
R3333	B	C	3C
R3339	B	C	3C
R3340	B	C	4C
R3342	B	C	4C
R3343	B	C	4C
R3345	B	C	3C
R3346	B	C	3C
R3347	B	C	3C
R3348	B	C	3D

REF.NO.	LOCATION		
R3349	B	C	4C
R3350	B	C	3D
R3351	B	C	3D
R3352	B	C	4D
R3363	B	C	4D
R3364	B	C	4C
R3371	B	C	5C
R3372	B	C	5C
R3373	B	C	5C
R3374	B	C	4D
R3386	B	C	5B
R3401	B	C	2E
R3402	B	C	3E
R3403	B	C	3E

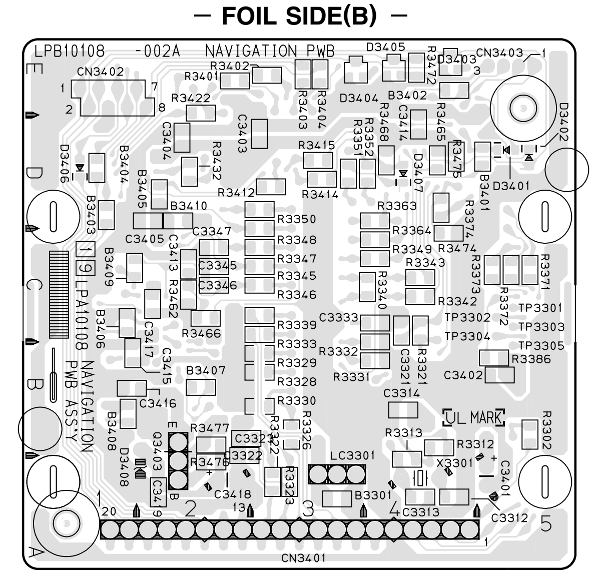
REF.NO.	LOCATION		
R3404	B	C	3E
R3412	B	C	3D
R3414	B	C	3D
R3415	B	C	3D
R3422	B	C	2E
R3432	B	C	2D
R3441	B	C	2A
R3442	B	C	2A
R3443	B	C	2B
R3445	B	C	2A
R3446	B	C	2B
R3448	B	C	2B
R3450	B	C	1B
R3452	B	C	2B

REF.NO.	LOCATION		
R3462	B	C	2C
R3463	B	C	2B
R3464	B	C	2B
R3465	B	C	4D
R3466	B	C	2C
R3467	B	C	2C
R3468	B	C	4D
R3472	B	C	4E
R3475	B	C	4D
TESTPOINT			
TP3301	B	C	5C
TP3302	B	C	5C
TP3303	B	C	5C
TP3304	B	C	5C

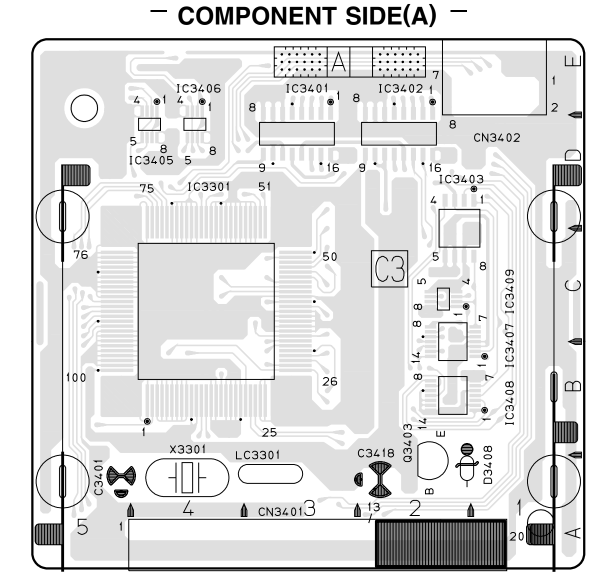
REF.NO.	LOCATION		
TP3305	B	C	5B
OTHER			
LC3301	A	D	3A
X3301	A	D	4A

<19>NAVIGATION LPB10108-002A

– FOIL SIDE(B) –



– COMPONENT SIDE(A) –



COMPONENT PARTS LOCATION GUIDE <NAVIGATION>

REF.NO.	LOCATION		
CAPACITOR			
C3312	B	C	4A
C3313	B	C	4A
C3314	B	C	4B
C3321	B	C	4C
C3322	B	C	2B
C3323	B	C	2B
C3333	B	C	4C
C3345	B	C	2C
C3346	B	C	2C
C3347	B	C	2C
C3401	A	D	5A

REF.NO.	LOCATION		
C3402	B	C	5B
C3403	B	C	3D
C3404	B	C	2D
C3405	B	C	2D
C3413	B	C	2C
C3414	B	C	4D
C3415	B	C	1B
C3416	B	C	1B
C3417	B	C	2C
C3418	A	D	2A
C3419	B	C	2A

REF.NO.	LOCATION		
CONNECTOR			
CN3401	A	D	4A
CN3402	A	D	1E
DIODE			
D3401	B	C	5D
D3402	B	C	5D
D3403	B	C	4E
D3404	B	C	3E
D3405	B	C	4E
D3406	B	C	1D
D3407	B	C	4D
D3408	A	D	2A

REF.NO.	LOCATION		
IC			
IC3301	A	C	4C
IC3401	A	C	3D
IC3402	A	C	2D
IC3403	A	C	2D
IC3405	A	C	4D
IC3406	A	C	4D
IC3407	A	C	2C
IC3408	A	C	2B
IC3409	A	C	2C
TRANSISTOR			
Q3403	A	D	2B

REF.NO.	LOCATION		
RESISTOR			
R3302	B	C	5B
R3312	B	C	4B
R3313	B	C	4A
R3321	B	C	4C
R3322	B	C	3A
R3323	B	C	3A
R3326	B	C	3B
R3328	B	C	3B
R3329	B	C	3B
R3330	B	C	3B
R3331	B	C	4B

REF.NO.	LOCATION		
R3332	B	C	4C
R3333	B	C	3C
R3339	B	C	3C
R3340	B	C	4C
R3342	B	C	4C
R3343	B	C	4C
R3345	B	C	3C
R3346	B	C	3C
R3347	B	C	3C
R3348	B	C	3D
R3349	B	C	4C
R3350	B	C	3D
R3351	B	C	3D

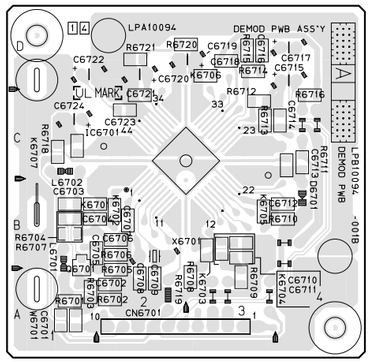
REF.NO.	LOCATION		
R3352	B	C	4D
R3363	B	C	4D
R3364	B	C	4C
R3371	B	C	5C
R3372	B	C	5C
R3373	B	C	5C
R3374	B	C	4D
R3386	B	C	5B
R3401	B	C	2E
R3402	B	C	3E
R3403	B	C	3E
R3404	B	C	3E
R3412	B	C	3D

REF.NO.	LOCATION		
R3414	B	C	3D
R3415	B	C	3D
R3422	B	C	2E
R3432	B	C	2D
R3462	B	C	2C
R3465	B	C	4D
R3466	B	C	2C
R3468	B	C	4D
R3472	B	C	4E
R3474	B	C	4C
R3475	B	C	4D
R3476	B	C	2A
R3477	B	C	2B

REF.NO.	LOCATION		
OTHER			
LC3301	A	D	3A
TP3301	B	C	5C
TP3302	B	C	5C
TP3303	B	C	5C
TP3304	B	C	5C
TP3305	B	C	5B
X3301	A	D	4A

4.19 DEMODULATOR, SW/DISPLAY AND REC SAFETY CIRCUIT BOARDS

<14>DEMODULATOR
LPB10094-001B



COMPONENT PARTS LOCATION GUIDE
＜DEMODULATOR＞

REF.NO.	LOCATION
CAPACITOR	
C6701	B C 1A
C6702	B C 2A
C6703	B C 1B
C6704	B C 1B
C6705	B C 2B
C6706	B C 2B
C6707	B C 2B
C6708	B C 2A
C6709	B C 2A
C6710	B C 3B
C6711	B C 3B
C6712	B C 4B
C6713	B C 4C
C6714	B C 4C
C6715	A D 4D
C6716	B C 3D
C6717	A D 4D
C6718	B C 3D
C6719	A D 3D
C6720	A D 2D
C6721	B C 2C
C6722	A D 1D
C6723	B C 2C
C6724	A D 1C

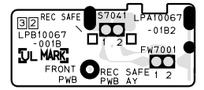
REF.NO.	LOCATION
CONNECTOR	
CN6701	A D 3A
DIODE	
D6701	A D 4B
IC	
IC6701	B C 3C
COIL	
L6701	A D 1A
L6702	A D 1C
TRANSISTOR	
Q6701	B C 1B
RESISTOR	
R6701	B C 1A
R6702	B C 2A
R6703	B C 1A
R6704	B C 1B
R6705	B C 2A
R6706	B C 2B
R6707	B C 1B
R6708	B C 3A
R6709	B C 3A
R6710	B C 4B

REF.NO.	LOCATION
R6711	B C 4C
R6712	B C 3C
R6713	B C 3C
R6714	B C 3D
R6715	B C 3D
R6716	B C 4C
R6718	B C 1C
R6719	A D 2A
R6720	B C 3D
R6721	B C 2D
OTHER	
K6701	B C 1B
K6702	B C 2B
K6703	B C 3B
K6704	B C 3B
K6705	B C 3B
K6706	B C 3D
K6707	B C 1C
X6701	A D 2B

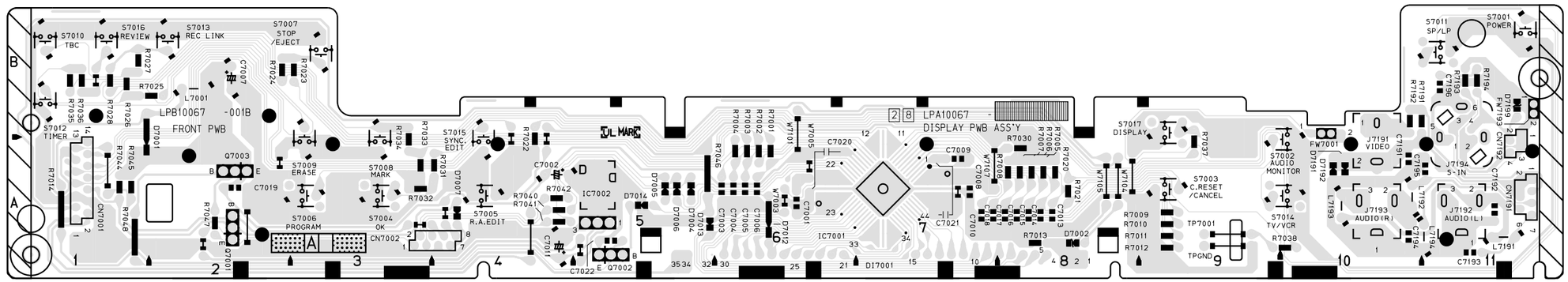
COMPONENT PARTS LOCATION GUIDE ＜SW/DISPLAY＞

REF.NO.	LOCATION
CAPACITOR	
C7001	A D 6A
C7002	A D 4A
C7003	A D 6A
C7004	A D 6A
C7005	A D 6A
C7006	A D 6A
C7007	A D 2B
C7008	A D 7A
C7009	A D 7A
C7010	A D 7A
C7011	A D 4A
C7013	A D 8A
C7014	A D 8A
C7015	A D 8A
C7016	A D 8A
C7017	A D 8A
C7018	A D 7A
C7019	A D 2A
C7020	A D 6A
C7021	A D 7A
C7022	A D 5A
C7191	A D 10A
C7192	A D 11A
C7193	A D 11A
C7194	A D 10A
C7195	A D 11A
C7196	A D 11B
CONNECTOR	
CN7001	A D 1A
CN7002	A D 3A
CN7191	A D 11A
CN7192	A D 11B
DIODE	
D7001	A D 1B
D7004	A D 5A
D7005	A D 5A
D7006	A D 5A
D7007	A D 4A
D7012	A D 6A
D7013	A D 5A
D7014	A D 5A
D7191	A D 10A
D7192	A D 10A
D7199	A D 11B
IC	
IC7001	B C 7A
IC7002	A D 5A
JACK	
J7191	A D 10B
J7192	A D 11A
J7193	A D 10A
J7194	A D 11A
COIL	
L7001	A D 2B
L7191	A D 11A
L7192	A D 10A
L7193	A D 10A
L7194	A D 11A
TRANSISTOR	
Q7001	A D 2A
Q7002	A D 5A
Q7003	A D 2A
RESISTOR	
R7001	A D 6A
R7002	A D 6A
R7003	A D 6A
R7004	A D 6A
R7005	A D 8A
R7006	A D 8A
R7007	A D 8A
R7008	A D 8A
R7009	A D 9A
R7010	A D 9A
R7011	A D 9A
R7012	A D 9A
R7013	A D 8A
R7014	A D 8A
R7020	A D 8A
R7021	A D 8A
R7022	A D 4B
R7023	A D 3B
R7024	A D 2B
R7025	A D 2B
R7026	A D 1B
R7027	A D 1B
R7028	A D 8A
R7030	A D 8A
R7031	A D 4A
R7032	A D 3A
R7033	A D 3A
R7034	A D 3A
R7035	A D 1B
R7036	A D 1B
R7037	A D 9A
R7038	A D 9A
R7040	A D 4B
R7041	A D 4A
R7042	A D 4A
R7044	A D 1A
R7045	A D 1A
R7046	A D 5A
R7047	A D 2A
R7048	A D 11B
R7191	A D 11B
R7192	A D 10B
R7193	A D 11B
R7194	A D 11B
SWITCH	
S7001	A D 11B
S7002	A D 10A
S7003	A D 9A
S7004	A D 3A
S7005	A D 4A
S7006	A D 3A
S7007	A D 3B
S7008	A D 3A
S7009	A D 3A
S7010	A D 1B
S7011	A D 11B
S7012	A D 1B
S7013	A D 2B
S7014	A D 10A
S7015	A D 4A
S7016	A D 1B
S7017	A D 9B
OTHER	
DI7001	A D 7A
D7002	A D 8A
FW7001	A D 10B
FW7193	A D 11B
TP7001	A D 9A
TPGND	A D 9A

<32>REC SAFETY
LPB10067-001B

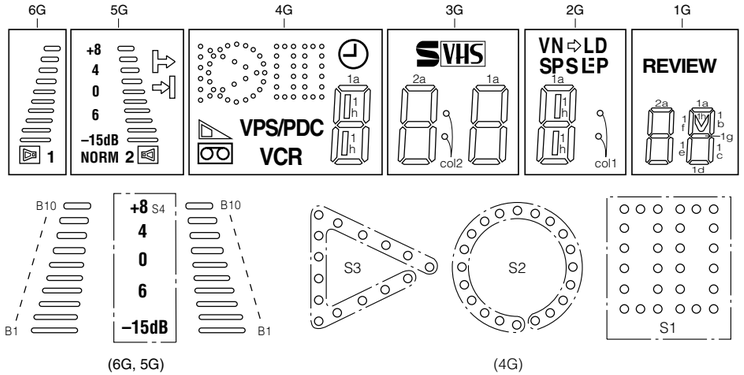


<28>SW/DISPLAY
LPB10067-001B



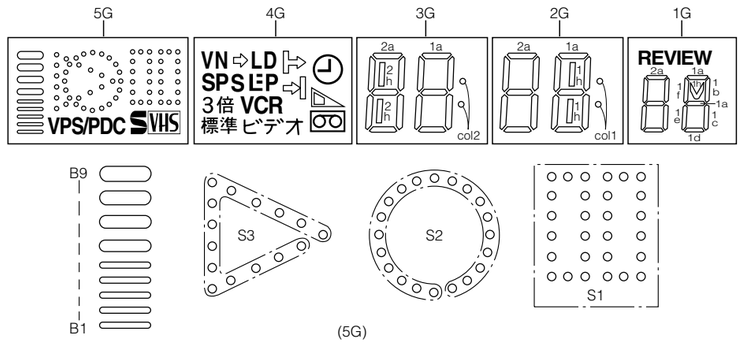
4.20 FDP GRID ASSIGNMENT AND ANODE CONNECTION

[A] (FDP with audio level indicator)



(6G, 5G) (4G)

[B] (FDP without audio level indicator)



(5G)

ANODE CONNECTION [A]

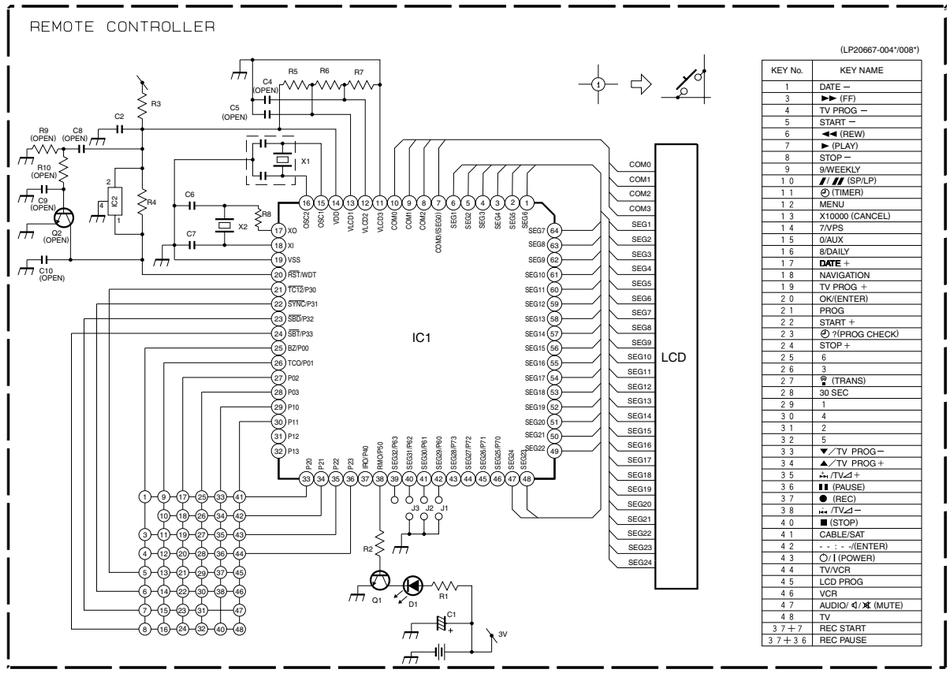
	6G	5G	4G	3G	2G	1G
P 1	—	⇨	S2	1a	1a	1a
P 2	—	⇨	S1	1b	1b	1b
P 3	—	S4	S3	1f	1f	1f
P 4	—	NORM	VPS/PDC	1g	1g	1g
P 5	1	2	◴	1c	1c	1c
P 6	▶	■	◺	1e	1e	1e
P 7	B10	B10	📼	1d	1d	1d
P 8	B9	B9	VCR	col2	1h	1h
P 9	B8	B8	1a	2a	col1	2a
P10	B7	B7	1b	2b	⇨	2b
P11	B6	B6	1f	2f	VN	2f
P12	B5	B5	1g	2g	LD	2g
P13	B4	B4	1c	2c	SP	2c
P14	B3	B3	1e	2e	S (SEP)	2e
P15	B2	B2	1d	2d	: (SEP)	2d
P16	B1	B1	1h	SVHS	LP (SEP)	REVIEW

ANODE CONNECTION [B]

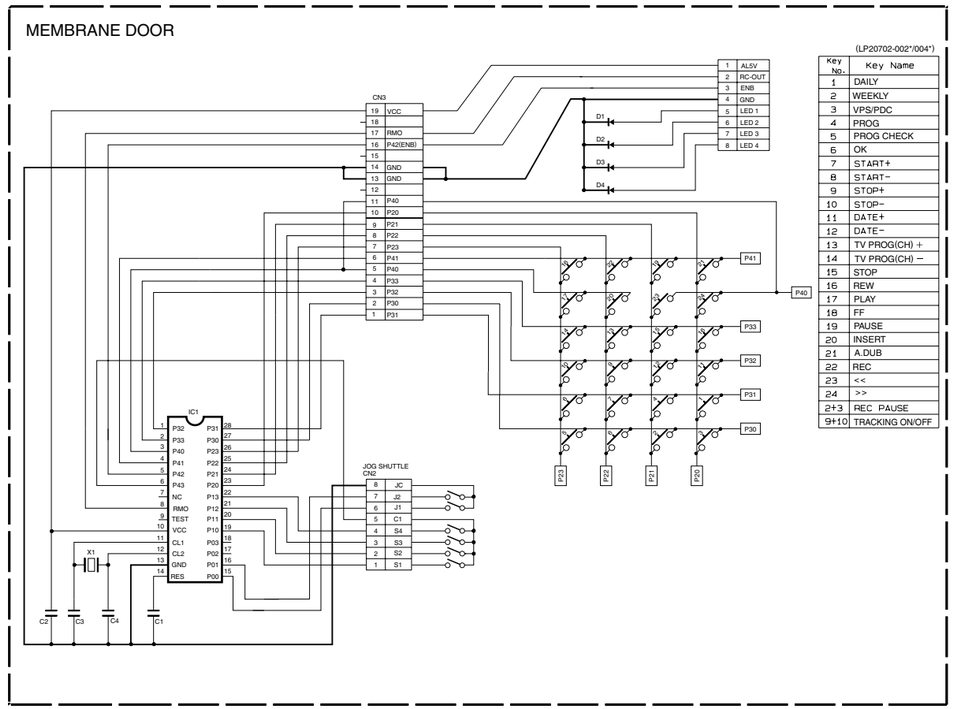
	5G	4G	3G	2G	1G
P 1	S2	⇨	1a	1a	1a
P 2	S1	⇨	1b	1b	1b
P 3	S3	3倍	1f	1f	1f
P 4	VPS/PDC	標準	1g	1g	1g
P 5	SVHS	◴	1c	1c	1c
P 6	—	◺	1e	1e	1e
P 7	—	📼	1d	1d	1d
P 8	B9	VCR	col2	1h	1h
P 9	B8	ビデオ	2a	2a	2a
P10	B7	⇨	2b	2b	2b
P11	B6	VN	2f	2f	2f
P12	B5	LD	2g	2g	2g
P13	B4	SP	2c	2c	2c
P14	B3	S (SEP)	2e	2e	2e
P15	B2	: (SEP)	2d	2d	2d
P16	B1	LP (SEP)	2h	col1	REVIEW

4.21 REMOTE CONTROL AND MEMBRANE DOOR SCHEMATIC DIAGRAMS

NOTES:
1. All parts shown in this schematic are critical for safety.
2. This schematic is only for reference.
   Avoid replacing individual parts.
   Replace the entire unit only.



KEY No.	KEY NAME
1	DATE −
3	►► (FF)
4	TV PROG −
5	START −
6	◄◄ (REW)
7	► (PLAY)
8	STOP −
9	9/WEEKLY
10	▰/▰▰ (SP/LP)
11	◴ (TIMER)
12	MENU
13	X10000 (CANCEL)
14	7/VPS
15	0/AUX
16	8/DAILY
17	DATE +
18	NAVIGATION
19	TV PROG +
20	OK/(ENTER)
21	PROG
22	START +
23	◴ ?(PROG CHECK)
24	STOP +
25	6
26	3
27	■ (TRANS)
28	30 SEC
29	1
30	4
31	2
32	5
33	▼/TV PROG−
34	▲/TV PROG+
35	⁛/TV⊿+
36	▮▮ (PAUSE)
37	● (REC)
38	⁛/TV⊿−
40	■ (STOP)
41	CABLE/SAT
42	- - : - -/(ENTER)
43	⏻/ I (POWER)
44	TV/VCR
45	LCD PROG
46	VCR
47	AUDIO/ 🕩/✕ (MUTE)
48	TV
37+7	REC START
37+36	REC PAUSE

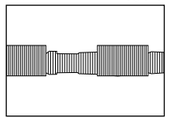


Key No.	Key Name
1	DAILY
2	WEEKLY
3	VPS/PDC
4	PROG
5	PROG CHECK
6	OK
7	START+
8	START−
9	STOP+
10	STOP−
11	DATE+
12	DATE−
13	TV PROG(CH) +
14	TV PROG(CH) −
15	STOP
16	REW
17	PLAY
18	FF
19	PAUSE
20	INSERT
21	A.DUB
22	REC
23	<<
24	>>
2+3	REC PAUSE
9+10	TRACKING ON/OFF

4.22 WAVEFORMS

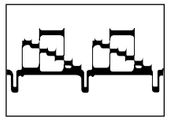
< VIDEO/AUDIO >

WF1 IC1-1



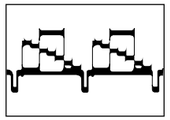
PB 0.3 Vp-p
20 mV/5 msec/DIV

WF2 IC1-11



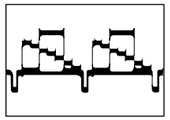
REC/PB 0.54 Vp-p
20 mV/20 µsec/DIV

WF3 IC1-13



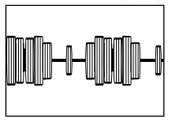
REC/PB 0.54 Vp-p
20 mV/20 µsec/DIV

WF4 IC1-14



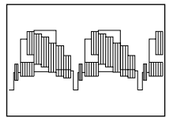
PB 0.54 Vp-p
20 mV/20 µsec/DIV

WF5 IC1-16



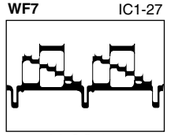
REC 0.8 Vp-p
20 mV/20 µsec/DIV

WF6 IC1-18



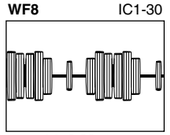
REC 0.62 Vp-p
20 mV/20 µsec/DIV

WF7 IC1-27



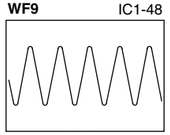
PB 2.3 Vp-p
50 mV/20 µsec/DIV

WF8 IC1-30



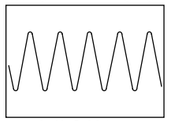
PB 0.88 Vp-p
20 mV/20 µsec/DIV

WF9 IC1-48



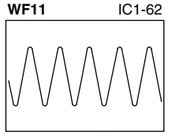
PB 0.48 Vp-p
10 mV/0.5 msec/DIV

WF10 IC1-52



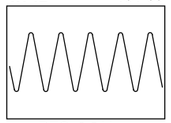
REC 0.11 Vp-p
2 mV/0.5 msec/DIV

WF11 IC1-62



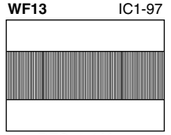
REC/PB 0.82 Vp-p
20 mV/0.5 msec/DIV

WF12 IC1-80



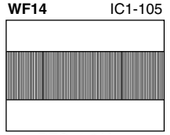
REC 0.2 Vp-p
5 mV/0.5 msec/DIV

WF13 IC1-97



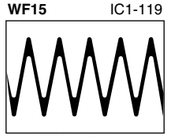
REC 1.4 Vp-p
0.1 V/5 msec/DIV

WF14 IC1-105



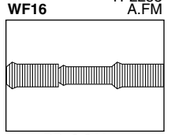
REC 1.6 Vp-p
0.1 V/1 msec/DIV

WF15 IC1-119



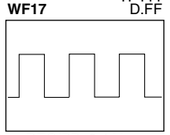
REC 0.7 Vp-p
20 mV/0.5 msec/DIV

WF16 TP2253 A.FM



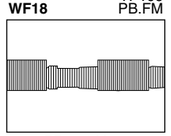
PB 0.6 Vp-p
50 mV/5 msec/DIV

WF17 TP111 D.FF



REC/PB 3.4 Vp-p
0.1 V/10 msec/DIV

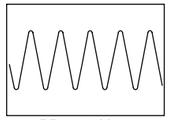
WF18 TP106 PB.FM



PB 0.3 Vp-p
20 mV/5 msec/DIV

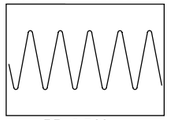
< VSC >

WF1 LPF2501-3



PB 0.18 Vp-p
5 mV/0.5 msec/DIV

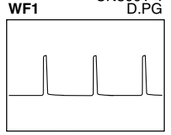
WF2 IC2501-48



PB 0.5 Vp-p
10 mV/0.5 msec/DIV

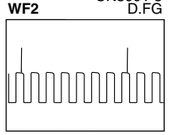
< SYSCON >

WF1 CN3001-4 D.PG



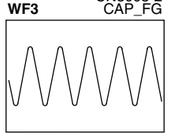
REC/PB 4.5 Vp-p
0.1 V/10 msec/DIV

WF2 CN3001-5 D.FG



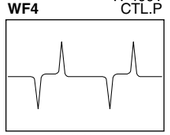
REC/PB 4.5 Vp-p
0.1 V/10 msec/DIV

WF3 CN3003-2 CAP_FG



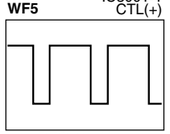
REC/PB 3.2 Vp-p
50 mV/0.5 msec/DIV

WF4 TP4001 CTL.P



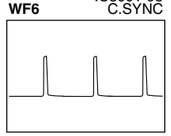
PB 2.6 Vp-p
0.1 V/10 msec/DIV

WF5 IC3001-1 CTL(+)



REC 3.5 Vp-p
0.1 V/10 msec/DIV

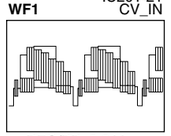
WF6 IC3001-98 C.SYNC



REC/PB 4.0 Vp-p
0.1 V/20 µsec/DIV

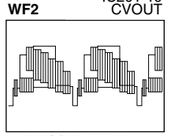
< TERMINAL >

WF1 IC201-21 CV_IN



REC/PB 2.2 Vp-p
50 mV/20 µsec/DIV

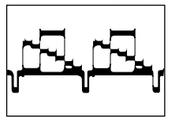
WF2 IC201-19 CVOUT



REC/PB 2.2 Vp-p
50 mV/20 µsec/DIV

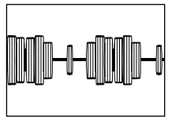
< S-SUB >

WF1 IC501-1



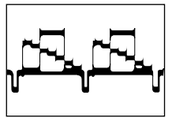
REC 1.0 Vp-p
20 mV/20 µsec/DIV

WF2 IC501-3



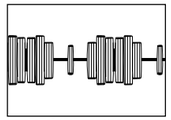
REC 0.7 Vp-p
20 mV/20 µsec/DIV

WF3 IC501-15



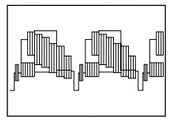
REC/PB 2.2 Vp-p
50 mV/20 µsec/DIV

WF4 IC501-17



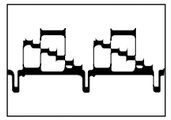
REC/PB 1.6 Vp-p
50 mV/20 µsec/DIV

WF5 IC501-19



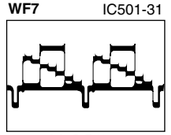
REC/PB 2.2 Vp-p
50 mV/20 µsec/DIV

WF6 IC501-29



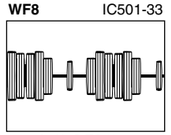
REC/PB 0.52 Vp-p
20 mV/20 µsec/DIV

WF7 IC501-31



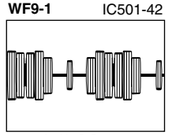
PB 0.5 Vp-p
20 mV/20 µsec/DIV

WF8 IC501-33



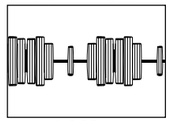
REC 0.76 Vp-p
20 mV/20 µsec/DIV

WF9-1 IC501-42



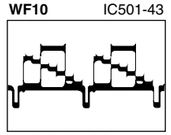
REC 0.6 Vp-p
20 mV/20 µsec/DIV

WF9-2 IC501-42



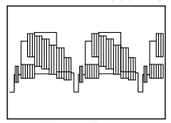
PB 0.96 Vp-p
20 mV/20 µsec/DIV

WF10 IC501-43



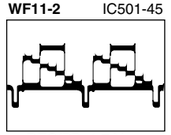
REC/PB 0.8 Vp-p
20 mV/20 µsec/DIV

WF11-1 IC501-45



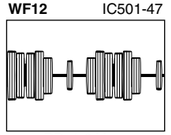
REC 1.7 Vp-p
50 mV/20 µsec/DIV

WF11-2 IC501-45



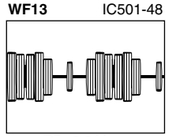
REC/PB 1.7 Vp-p
50 mV/20 µsec/DIV

WF12 IC501-47



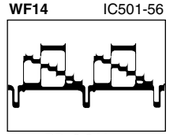
PB 1.8 Vp-p
50 mV/20 µsec/DIV

WF13 IC501-48



PB 0.6 Vp-p
20 mV/20 µsec/DIV

WF14 IC501-56



PB 2.2 Vp-p
50 mV/20 µsec/DIV

4.23 VOLTAGE CHARTS

<VIDEO/AUDIO>

MODE PIN NO.	REC	PLAY
IC1		
1	4.2	2.1
2	2.8	2.8
3	2.6	2.6
4	1.9	1.9
5	1.9	1.9
6	2.4	2.1
7	1.5	1.2
8	0	4.1
9	2.6	1.9
10	2.8	2.8
11	3.1	3.1
12	2.8	2.5
13	3.1	3.1
14	3.5	2.5
15	0	0
16	2.8	2.8
17	1.5	1.5
18	2.8	2.8
19	3.3	3.3
20	2.8	2.8
21	1.6	2.0
22	2.8	2.8
23	3.1	2.8
24	4.9	5.0
25	0.3	0.3
26	0	0
27	1.3	2.1
28	2.8	2.3
29	1.9	1.9
30	2.1	2.1
31	0	0
32	2.6	2.6
33	4.9	4.9
34	2.7	2.2
35	4.9	4.9
36	2.5	2.5
37	2.3	2.3
38	-	-
39	1.3	1.3
40	-	-
41	2.7	2.7
42	2.2	2.2
43	0	0
44	2.1	2.1
45	4.7	4.7
46	4.1	4.1
47	3.0	3.0
48	2.6	2.6
49	4.9	4.9
50	2.5	2.5
51	2.8	2.8
52	2.3	2.3
53	2.3	2.3
54	2.5	2.5
55	2.2	2.2
56	0.4	0.4
57	2.4	2.4
58	8.3	8.3
59	4.7	4.7
60	4.1	4.1
61	4.2	4.2
62	4.2	4.2
63	2.3	2.3
64	2.3	2.3
65	0.6	0.6
66	3.2	3.2
67	4.2	4.2
68	4.2	4.2
69	2.4	2.4
70	0	0
71	0.3	0.3
72	0.2	0.2
73	0.3	0.3
74	2.3	2.3
75	2.6	2.6
76	0	0
77	2.6	2.6
78	0.3	0.3
79	0.2	0.2
80	0.2	0.2
81	2.3	2.3
82	0.8	0.8
83	0	0
84	2.4	2.4
85	2.3	2.3
86	2.3	2.3
87	1.7	1.9
88	2.3	2.3
89	2.3	2.3
90	2.4	2.4
91	0	0
92	0	0
93	0	2.3
94	1.9	1.3
95	0	0
96	2.5	2.3
97	2.7	2.3
98	2.5	2.3
99	5.0	5.0
100	5.0	5.0
101	0	0
102	0	0
103	0	0
104	2.4	2.4
105	2.4	2.4
106	2.4	2.4
107	5.0	5.0
108	0	0
109	0	0
110	0	0
111	0	4.0
112	2.6	2.6
113	0.5	0.4
114	0	0
115	2.5	2.5
116	2.5	2.5
117	2.5	2.5
118	0	0
119	2.5	2.5
120	4.5	4.4
CN1		
4	0	0
5	0	0
6	0	0
7	0	0
8	2.4	2.3
9	2.4	2.3
10	2.4	2.3
11	2.4	2.3
12	2.7	2.3
13	2.7	2.3
14	2.7	2.3
15	0	0
16	0	0
CN2001		
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
6	2.2	2.4
7	2.4	2.4
CN2002		
1	0	0
2	0	0
CN2051		
1	7.9	0.2
2	0	0
3	0	0
4	0	0

<AUDIO ERASE>

MODE PIN NO.	REC	PLAY
CN2052		
1	7.9	0.2
2	0	0
3	0	0
4	0	0

<VSC>

MODE PIN NO.	REC	PLAY
IC2501		
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
6	0	0
7	0	0
8	0	0
9	0	0
10	-	-
11	-	-
12	0	0
13	0	0
14	0	0
15	0	0
16	0	0
17	0	0
18	0	0
19	3.2	3.2
20	4.5	4.5
21	3.9	3.9
22	1.9	1.4
23	0	0
24	4.8	4.8
25	0	0
26	4.9	4.9
27	4.9	4.9
28	4.9	4.9
29	4.9	4.9
30	4.9	4.9
31	4.9	4.9
32	0.6	0.6
33	0	0
34	0	0
35	0	0
36	0	0
37	0	0
38	3.4	3.3
39	4.3	4.3
40	0	0
41	4.9	4.9
42	4.5	4.5
43	0	0
44	0	0
45	4.9	4.9
46	0	0
47	0	0
48	-	-
49	4.0	4.0
50	4.8	4.6
51	4.9	4.9
52	4.0	4.0
53	4.3	4.3
54	-	-
55	-	-
56	0	0
57	0	0
58	4.9	0
59	0	0
60	0	0
61	0	0
62	0	0
63	5.0	5.0
64	-	-
65	-	-
66	-	-
67	-	-
68	0	0
69	-	-

<SYSTEM CONTROL>

MODE PIN NO.	REC	PLAY
IC3001		
1	-	2.4
2	0	0
3	-	2.4
4	2.4	2.4
5	0	0.3
6	2.5	2.5
7	2.4	2.4
8	2.4	2.4
9	5.0	5.0
10	4.9	4.9
11	0	0
12	0	0
13	0	3.1
14	4.7	4.7
15	4.8	4.8
16	0.5	0.5
17	0	0
18	0	0
19	3.2	3.2
20	4.5	4.5
21	3.9	3.9
22	1.9	1.4
23	0	0
24	4.8	4.8
25	0	0
26	4.9	4.9
27	4.9	4.9
28	4.9	4.9
29	4.9	4.9
30	4.9	4.9
31	4.9	4.9
32	0.6	0.6
33	0	0
34	0	0
35	0	0
36	0	0
37	0	0
38	3.4	3.3
39	4.3	4.3
40	0	0
41	4.9	4.9
42	4.5	4.5
43	0	0
44	0	0
45	4.9	4.9
46	0	0
47	0	0
48	-	-
49	4.0	4.0
50	4.8	4.6
51	4.9	4.9
52	4.0	4.0
53	4.3	4.3
54	-	-
55	-	-
56	0	0
57	0	0
58	4.9	0
59	0	0
60	0	0
61	0	0
62	0	0
63	5.0	5.0
64	-	-
65	-	-
66	-	-
67	-	-
68	0	0
69	-	-
70	5.0	5.0
71	5.0	5.0
72	5.0	5.0
73	5.0	5.0
74	0	0
75	4.5	4.5
76	4.5	4.5
77	0	0
78	0	0
79	5.0	5.0
80	0	0
81	0	0
82	4.9	4.9
83	-	-
84	0	0
85	0	0
86	5.0	5.0
87	5.0	0
88	4.9	4.9
89	0	0
90	0	0
91	2.8	2.8
92	4.9	4.9
93	0	0
94	4.9	4.9
95	4.9	4.9
96	0	0
97	4.9	4.9
98	0.3	0.3
99	0	-
100	-	-
101	2.8	2.8
102	1.2	1.2
103	5.0	5.0
104	4.8	4.8
105	4.8	4.8
106	4.8	4.8
107	0	0
108	1.5	1.5
109	4.9	4.9
110	0	0
111	0	0
112	2.4	2.4
IC3002		
1	4.9	4.9
2	4.9	4.9
3	0	0
IC3003		
1	0	0
2	0	0
3	0	0
4	0	0
5	4.5	4.5
6	4.5	4.5
7	0	0
8	4.9	4.9
IC3004		
1	11.4	11.4
2	0	0
3	0	0
4	0	0
5	11.4	11.4
6	11.4	11.4
7	0	0
8	0	0
9	0	0
IC3501		
1	3.5	3.5
2	0.2	0.2
3	0	0
4	0.2	0.2
5	12.1	12.1
6	12.1	12.1
7	0	0
8	0	0
9	0	0
IC3601		
1	0	0
2	0	0
3	0	0
4	0	3.9
5	4.5	4.6
6	0	0
7	0	0
8	0	0
9	0	3.8
10	0	0.2
11	0	0.2
12	9.3	0
13	4.8	0
14	3.6	3.6
15	0	0
16	4.9	4.9
IC3651		
1	0	0
2	0	0
3	-	-
4	5.7	5.7
5	3.1	3.1
6	4.5	4.5
7	0	0
8	0	0
9	0	0
10	0	0
11	0	0
12	0	2.8
13	0	0
14	0	0
15	0	0
16	4.9	4.9
CN3001		
1	11.4	11.5
2	0	0
3	1.4	1.4
4	0	0
5	1.5	1.5
CN3002		
1	0	0
2	0	0
CN3003		
1	0	0
2	2.5	2.5
3	2.7	2.7
4	5.0	5.0
5	0	0
6	4.9	4.9
7	-	-
8	11.3	11.4
CN3004		
1	4.9	4.9
2	4.9	4.9
3	0	0
4	0	0
CN3011		
1	4.9	4.9
2	4.9	4.9
3	4.9	4.9
4	4.9	4.9
5	4.3	4.3
6	4.9	4.9
7	3.9	3.9
8	4.3	4.3
9	4.9	4.9
10	0	0
11	0	0
12	-17.8	-17.8
13	-14.2	-14.2
14	-26.7	-26.7
CN3501		
1	0	0
2	0	0
3	0	0
4	5.0	5.0
5	0	0
6	0	0

<SW.REG>

MODE PIN NO.	REC	PLAY
IC5101		
1	69.3	68.0
2	-	-
3	0	0
4	-	-
5	-	-
IC5301		
1	5.6	5.6
2	5.1	5.1
3	4.5	4.5
4	0	0
5	11.9	11.9
6	11.2	11.2
7	12.1	12.2
8	5.6	5.6
9	1.3	1.3
10	4.3	4.3

<TUNER>

MODE PIN NO.	REC	PLAY
IC6080		
1	3.9	3.9
2	0	0
3	3.9	3.9
4	3.9	3.9
5	11.2	11.2
CN6701		
1	0	0
2	4.6	4.6
3	4.5	4.5
4	4.8	4.8
5	0.3	0.3
6	0.3	0.3
7	4.9	4.9
8	0	0
9	0	0
10	0	0

<CONNECTION>

MODE PIN NO.	REC	PLAY
CN501		
1	2.5	2.5
2	0	0
3	2.2	2.3
4	5.0	5.0
5	2.0	2.0
6	0.3	4.5
7	3.3	3.3
8	0	0
9	2.9	2.9
10	0	0
11	4.7	4.7
12	4.1	4.1
13	0	0
14	0.7	0.7
15	2.5	2.5
16	0	0
17	-	-
CN502		
1	0.3	4.5
2	4.1	4.1
3	4.7	4.7
4	2.4	2.4
5	4.9	4.9
6	4.9	4.9
7	0	0
8	0	0
9	2.3	2.3
10	2.0	2.0
11	3.3	3.3
12	2.9	2.9
13	2.8	2.8
14	0	0
15	0	0
16	2.4	2.1
17	1.3	2.3
18	4.6	4.6
19	1.7	1.7
20	0	0
21	0	0
22	0	0
23	0	0
24	0	0
25	2.3	2.3
26	0	0
27	2.4	2.3
28	0	0
CN901		
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
CN902		
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
CN903		
1	3.0	3.0
2	0	0
3	0	0
4	0.1	0.1
5	0	0
6	2.3	2.3
7	0	0
8	10.6	10.6
9	0	0
10	11.2	11.2
11	0.8	0.8
12	4.9	4.9
CN904		
1	0	0
2	4.6	4.6
3	4.9	4.9
4	0	0
5	3.0	3.0
6	4.3	4.3
7	3.9	3.9
8	4.9	4.9
9	0	0
10	4.3	4.3
11	0	0
12	2.1	2.1
CN905		
1	4.6	4.6
2	4.5	4.5
3	4.8	4.8
4	0	0
5	0	0
CN907		
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
6	0	0
7	0	0
8	0.3	0.3
9	0	0
10	0	0
CN7103		
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
6	2.3	2.3
7	5.0	5.0
8	4.8	4.8
9	5.0	5.0
10	4.8	4.8
11	4.4	4.4
12	3.9	3.9
13	5.0	5.0

<3D DIGITAL/2M>

MODE PIN NO.	REC	PLAY
IC1401	-	-
CN1401		
1	2.5	2.5
2	0	0
3	2.2	2.3
4	5.0	5.0
5	2.0	2.0
6	0.3	4.5
7	3.3	3.3
8	0	0
9	2.9	2.9
10	0	0
11	4.7	4.7
12	4.1	4.1
13	0	0
14	0.7	0.7
15	2.5	2.5
16	0	0
17	-	-

<TERMINAL>

MODE PIN NO.	REC	PLAY
IC201	-	-
IC901	-	-
CN911		
1	0	0
2	3.1	2.9
3	0	0
4	2.4	2.4
5	0	0
6	2.4	2.2
7	0	0
8	0	0
9	0	0
10	0	0
11	0	0
12	5.5	5.5
13	0	0
14	0.1	0.1
CN912		
1	5.0	5.0
2	4.4	4.4
3	4.0	4.0
4	5.0	5.0
5	0	0
6	0.3	0.3
7	5.0	5.0
8	5.0	5.0
CN913		
1	3.0	3.0
2	0	0
3	0	0
4	0.1	0.1
5	0	0
6	2.3	2.3
7	0	0
8	10.6	10.6
9	0	0
10	11.2	11.2
11	0.8	0.8
12	4.9	4.9
CN914		
1	0	0
2	4.6	4.6
3	4.9	4.9
4	0	0
5	3.0	3.0
6	4.3	4.3
7	3.9	3.9
8	4.9	4.9
9	0	0
10	4.3	4.3
11	0	0
12	2.1	2.1
CN915		
1	4.6	4.6
2	4.5	4.5
3	4.8	4.8
4	0	0
5	0	0

<DEMODULATOR>

MODE PIN NO.	REC	PLAY
IC6701	-	-
CN6701		
1	0	0
2	4.6	4.6
3	4.5	4.5
4	4.8	4.8
5	0.3	0.3
6	0.3	0.3
7	4.9	4.9
8	0	0
9	0	0
10	0	0

<S-SUB>

MODE PIN NO.	REC	PLAY
IC501	-	-
IC502	-	-
CN511		
1	0.3	4.5
2	4.1	4.1
3	4.7	4.7
4	2.4	2.4
5	4.9	4.9
6	4.9	4.9
7	0	0
8	0	0
9	2.3	2.3
10	2.0	2.0
11	3.3	3.3
12	2.9	2.9
13	2.8	2.8
14	0	0
15	0	0
16	2.4	2.1
17	1.3	2.3
18	4.6	4.6
19	1.7	1.7
20	0	0
21	0	0
22	0	0
23	0	0
24	0	0
25	2.4	2.2
26	0	0
27	2.4	2.3
28	0	0
29	3.5	2.4
30	2.8	2.8
CN512		
1	0	0
2	3.1	2.9
3	0	0
4	2.4	2.4
5	0	0
6	2.4	2.2
7	0	0
8	0	0
9	0	0
10	0	0
11	0	0
12	5.5	5.5
13	0	0
14	0.1	0.1

<NAVIGATION>

MODE PIN NO.	REC	PLAY
IC3301	-	-
IC3401		
1	0.4	0.4
2	4.0	4.0
3	5.0	5.0
4	5.0	5.0
5	5.0	5.0
6	0	0
7	0	0
8	0	0
9	4.8	4.8
10	0	0
11	0	0
12	4.4	4.4
13	0	0.3
14	4.4	4.4
15	3.9	3.9
16	5.0	5.0
IC3402		
1	0.1	0.3
2	5.0	5.0
3	0	0.3
4	0	0.3
5	0	0.3
6	0	0
7	0	0
8	0	0
9	0	0
10	0	0
11	0	0
12	5.0	5.0
13	0	0.3
14	5.0	5.0
15	5.0	5.0
16	5.0	5.0
IC3403	-	-
IC3405		
1	0	0
2	5.0	5.0
3	5.0	5.0
4	0	0
5	5.0	5.0
6	5.0	5.0
7	0	0
8	5.0	5.0
IC3406		
1	0	0
2	5.0	5.0
3	5.0	5.0
4	0	0
5	5.0	5.0
6	5.0	5.0
7	0	0
8	4.4	4.4

<SW/DISPLAY>

MODE PIN NO.	REC	PLAY
IC7001		
1	5.0	5.0
2	2.2	2.2
3	0	0
4	2.2	2.2
5	5.0	5.0
6	5.0	5.0
7	5.0	5.0
8	5.0	5.0
9	5.0	5.0
10	5.0	5.0
11	5.0	5.0
12	4.4	4.4
13	3.9	3.9
14	5.0	5.0
15	4.5	4.5
16	-26.8	-26.8
17	-26.8	-26.8
18	-26.6	5.0
19	-26.6	-26.6
20	-26.6	-26.6
21	-22.6	-22.6
22	-	-
23	-	-
24	-	-
25	-	-
26	-	-
27	-	-
28	-	-
29	-	-
30	-	-
31	-	-
32	-	-
33	-	-
34	-	-
35	-	-
36	-	-
37	-	-
38	-	-
39	-	-
40	-	-
41	-	-
42	-	-
43	-	-
44	5.0	5.0
IC7002		
1	5.0	5.0
2	5.0	5.0
3	0	0
CN7001		
1	-26.7	-26.7
2	-14.2	-14.2
3	-17.8	-17.8
4	0	0
5	0	0
6	4.9	4.9
7	4.3	4.3
8	3.9	3.9
9	4.9	4.9
10	4.3	4.3
11	4.9	4.9
12	4.9	4.9
13	4.9	4.9
14	4.9	4.9
CN7002		
1	0	0
2	-0.1	-0.1
3	-0.1	2.2
4	-0.2	-0.2
5	0	0
6	5.0	5.0
7	5.0	5.0
8	5.0	5.0
CN7191		
3	0	0
4	0	0
5	0	0
6	0	0
7	0	0
CN7192		
1	0	0
2	0	0
3	0	0
4	0	0
FW7001		
1	5.0	5.0
2	0	0

<REC SAFETY>

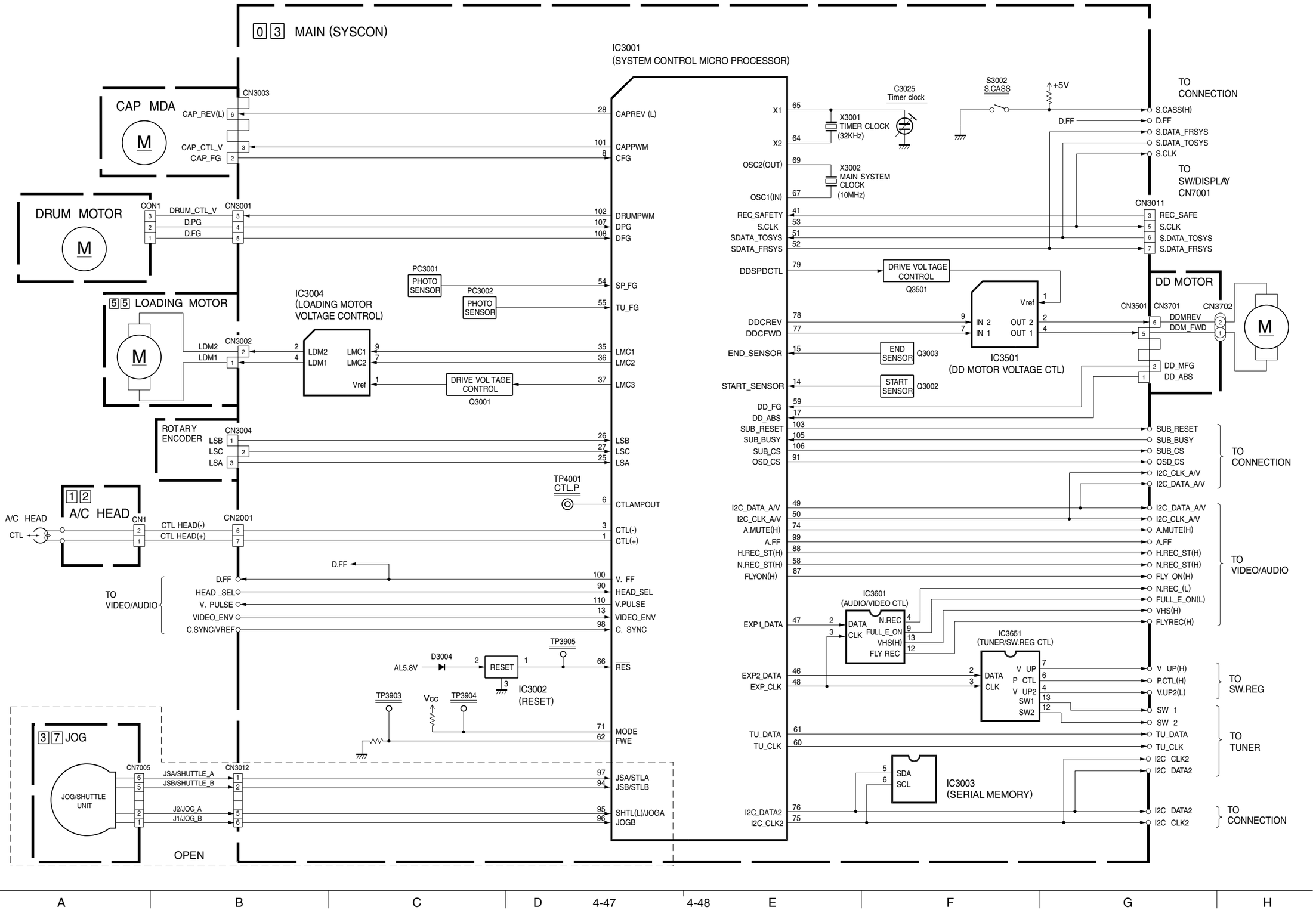
MODE PIN NO.	REC	PLAY
FW7001		
1	5.0	5.0
2	0	0

4.24 CPU PIN FUNCTION

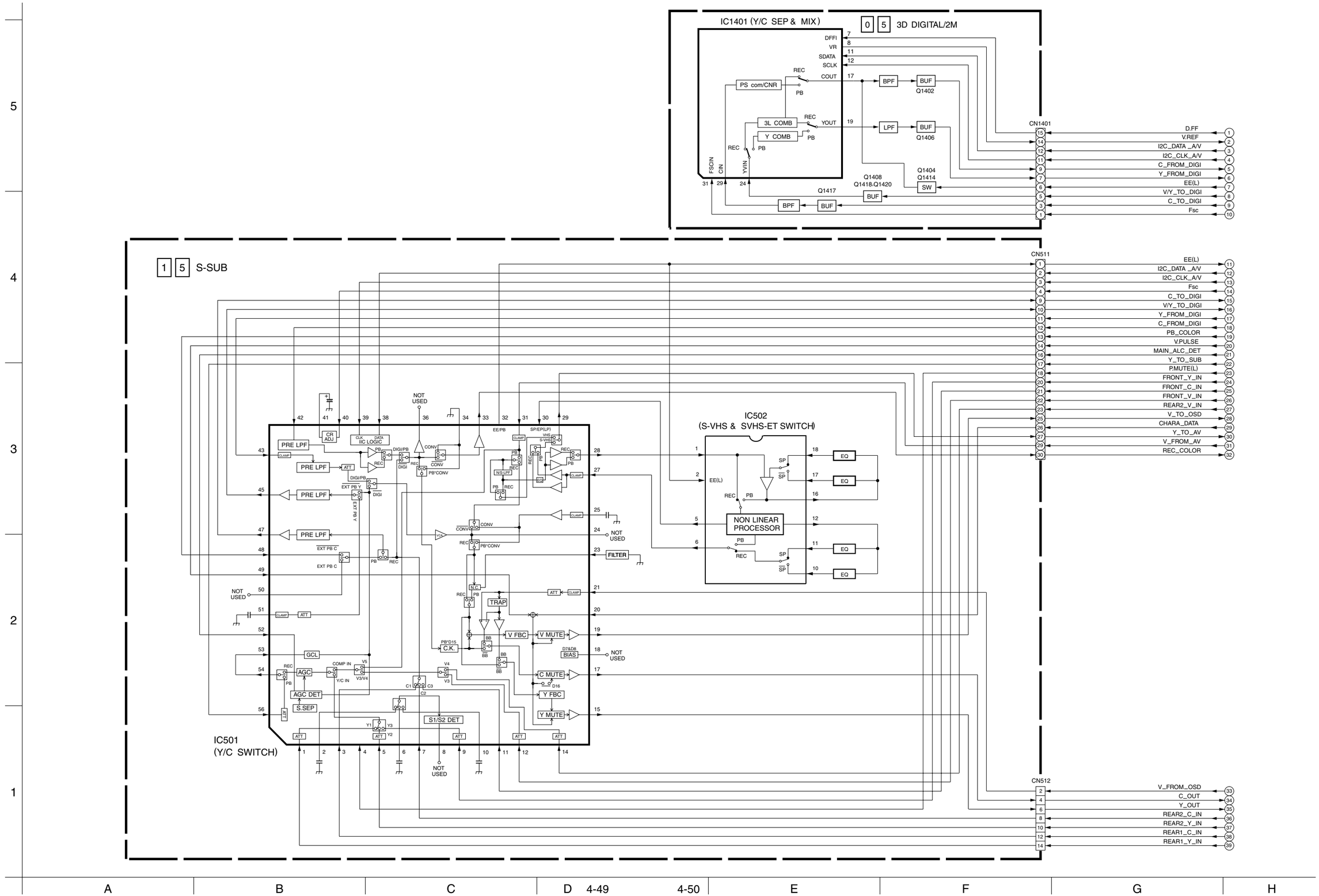
<SYSCON IC3001>

PIN NO.	LABEL	IN/OUT	FUNCTION
1	CTL(+)	IN/OUT	CTL(+) SIGNAL
2	SVSS	-	GND
3	CTL(-)	IN/OUT	CTL(-) SIGNAL
4	CTLBIAS	-	CTL BIAS VOLTAGE
5	CTLFB	IN	CTL PULSE FEEDBACK
6	CTLAMPOUT	OUT	CTL PULSE OUTPUT
7	CTLSMTIN	IN	CTL PULSE INPUT
8	CFG	IN	CAPSTAN FG PULSE INPUT
9	SVCC	-	SYSTEM POWER
10	AVCC	-	SYSTEM POWER FOR ANALOG CIRCUIT
11	NORM/MESEC/S	IN	SVHS MODE:H
12	SECAM_DET(H)/KILLER_DET/BIT_IN(H)	IN	NC/COLOR KILLER DETECT/NC
13	VIDEO_ENV	IN	AUTO TRACKING DETECT/INPUT THE AVERAGE OF PLAYBACK VIDEO SIGNAL
14	START_SENSOR	IN	START SENSOR
15	END_SENSOR	IN	END SENSOR
16	IND(L)	IN	AUDIO INPUT (LCH) FOR THE FDP AUDIO INDICATOR
17	DD_ABS	IN	DYNAMIC DRUM POSITION DETECT
18	SCR_ID/WA_DET	IN	SCRAMBLE CONTROL INPUT (SCRAMBLE:H)/NC
19	IND(R)	IN	AUDIO INPUT (RCH) FOR THE FDP AUDIO INDICATOR
20	BS_ANT/AFC	IN	TUNING CLOCK
21	LED/RF AGC	IN	NC/CHANGES IN ATS+IC OUTPUT AS CAUSED BY CHANGES IN RECEIVER SENSITIVITY WHEN THE SAME CHANNEL IS RECEIVED MORE THAN ONCE ARE INPUT.
22	A.ENV/ND(L)	IN	AUDIO PB FM ENV.INPUT/NON HiFi MODE:L
23	AVSS	-	GND FOR ANALOG CIRCUIT
24	CTL_GAIN	OUT	CONTROL AMP OUT FREQUENCY RESPONSE SWITCHING
25	LSA	IN	MECHANISM MODE DETECT(A)
26	LSB	IN	MECHANISM MODE DETECT(B)
27	LSC	IN	MECHANISM MODE DETECT(C)
28	CAP_REV(L)	OUT	CAPSTAN MOTOR REVERSE CONTROL (FWD:H/REV:L)
29	RC	IN	REMOTE CONTROL DATA INPUT
30	LOCK(L)/P.SAVE[0.1]	IN	TUNING PLL LOCK DETECT:L/NC
31	P50_IN	IN	CONTROL SIGNAL FOR TV LINK
32	R.PAUSE/COMPU_IN	IN	REMOTE PAUSE CONTROL / A/V COMPULINK INPUT
33	RAE_OUT/COMPUOUT	OUT	NC / A/V COMPULINK OUTPUT
34	P50_OUT	OUT	CONTROL SIGNAL FOR TV LINK
35	LMC1	OUT	LOADING MOTOR DRIVE(1)
36	LMC2	OUT	LOADING MOTOR DRIVE(2)
37	LMC3	OUT	LOADING MOTOR DRIVE(3)
38	SB_G(PWM)	OUT	VOLTAGE CONTROL SIGNAL FOR VIDEO FREQUENCY RESPONSE
39	STB/TEST	OUT	STROBE SIGNAL (FOR FDP DRIVER)
40	POWER_DET	IN	DETECTION SIGNAL FOR POWER DOWN OF AC POWER SUPPLY
41	REC_SAFETY	IN	REC SAFETY SWITCH DETECT (SW ON:L)
42	PROTECT	IN	DETECTION SIGNAL FOR SW POWER SUPPLY
43	VSS	-	GND
44	RMO	OUT	REMOTE CONTROL OUTPUT FOR SATELLITE RECEIVER
45	VCC	-	SYSTEM POWER
46	EXP2_DATA	IN/OUT	SERIAL DATA TRANSFER OUTPUT FOR TUNER/REG CONTROL
47	EXP1_DATA	IN/OUT	SERIAL DATA TRANSFER OUTPUT FOR AUDIO/VIDEO CONTROL
48	EXP_CLK	OUT	SERIAL DATA TRANSFER CLOCK FOR AUDIO/VIDEO AND TUNER/REG CONTROL
49	I2C_DATA_A/V	IN/OUT	SERIAL DATA TRANSFER OUTPUT FOR THE VIDEO/AUDIO IC
50	I2C_CLK_A/V	OUT	SERIAL DATA TRANSFER CLOCK FOR THE VIDEO/AUDIO IC
51	S.DATA_TOSYS	IN	SERIAL DATA TRANSFER OUTPUT FROM THE ON-SCREEN IC TO THE FDP DRIVER
52	S.DATA_FRSYS	OUT	SERIAL DATA TRANSFER OUTPUT FROM THE FDP DRIVER TO THE ON-SCREEN IC
53	S.CLK	OUT	SERIAL DATA TRANSMISSION CLOCK FROM THE FDP DRIVER TO THE ON-SCREEN IC
54	SP_FG	IN	DETECTION SIGNAL FOR SUPPLY REEL ROTATION/TAPE REMAIN
55	TU_FG	IN	DETECTION SIGNAL FOR TAKE-UP REEL ROTATION/TAPE REMAIN
56	JUST_CLK/EDS(H)	-	NC
57	TU_CE	OUT	CHIP ENABLE OF THE TUNER UNIT
58	N.REC_ST(H)	OUT	NORMAL AUDIO SOUND RECORDING START
59	DD_FG	IN	DYNAMIC DRUM FG INPUT
60	TU_CLK	OUT	CLOCK FOR DATA TRANSFER TO THE TUNER UNIT
61	TU_DATA	OUT	TUNING DATA
62	FWE	-	NC
63	NMI(L)	-	NC
64	X2	-	TIMER CLOCK (32.768KHz)
65	X1	-	TIMER CLOCK (32.768KHz)
66	RES(L)	-	RESET TERMINAL (RESET ON:L)
67	OSC1(IN)	-	MAIN SYSTEM CLOCK(10MHz)
68	VSS	-	GND
69	OSC2(OUT)	-	MAIN SYSTEM CLOCK(10MHz)
70	VCC	-	SYSTEM POWER
71	MODE	-	NC
72	TU_A_MUTE(H)	OUT	TUNER AUDIO MUTE CONTROL (MUTE:H)
73	TU_V_MUTE(H)	OUT	TUNER VIDEO CONTROL (MUTE:H)
74	A.MUTE(H)	OUT	AUDIO MUTE CONTROL (MUTE:H)
75	I2C_CLK2	OUT	SERIAL DATA TRANSFER CLOCK FOR MEMORY IC
76	I2C_DATA2	IN/OUT	SERIAL DATA TRANSFER OUTPUT FOR MEMORY IC
77	DDCFWD	OUT	DYNAMIC DRUM CONTROL (FORWARD)
78	DDCREV	OUT	DYNAMIC DRUM CONTROL (REVERSE)
79	DDSPDCTL	OUT	DYNAMIC DRUM SPEED CONTROL
80	V.P.CTL	OUT	V.PULSE CONTROL, V COMPENSATION DURING SPECIAL PLAYBACK
81	R-Y_REV/EDS_CS/EXT(L)	OUT	PAL EP MODE CONTROL/NC/NC
82	VCC	-	SYSTEM POWER
83	SLOW_P/CNR_CTL	OUT	MEMORY TIMING CONTROL IN THE SLOW MODE / NC
84	VSS	-	GND
85	SP_SHORT(H)	OUT	MODE SELECT
86	LP_SHORT(H)	OUT	MODE SELECT
87	FLY_ON(H)	OUT	FLYING ERASE ON:H
88	H.REC_ST(H)	OUT	HIFI AUDIO SOUND RECORDING START
89	TRICK(H)/M_TRICK(L)	OUT	SPECIAL PLAYBACK: H/REC AFC FILTER, PB APC FILTER, BURST ACC FILTER, COLOR KILLER DET FILTER
90	HEAD_SEL	OUT	HEAD SELECT(LP HEAD:H, SP HEAD:L)
91	OSD_CS	OUT	CHIP SELECT FOR THE ON-SCREEN IC
92	SYNC_DET(H)	IN	DETECTION OF VIDEO SYNC SIGNAL (DETECTED:H)
93	MESECAM(H)	OUT	MESECAM:H
94	JSB/STLB	-	NC
95	SHTL(L)/JOGA	-	NC
96	JOGB/S_CASS(H)	-	NC
97	JSA/STLA	-	NC
98	C.SYNC	IN	COMPOSITE SYNC
99	A.FF	OUT	AUDIO FF OUTPUT
100	V.FF	OUT	ROTATION DETECTION SIGNAL FOR DRUM MOTOR/TIMING CONTROL SIGNAL FOR REC
101	CAPPWM	OUT	CAPSTAN MOTOR CONTROL
102	DRUMPWM	OUT	DRUM MOTOR CONTROL
103	SUB_RESET	OUT	RESET SIGNAL FOR THE SUB CPU (NAVI)
104	HI_FF/REW(L)	OUT	HIGH FF/REW:L
105	SUB_BUSY	IN	SUB CPU (NAVI) BUSY
106	SUB_CS	OUT	CHIP SELECT FOR THE SUB CPU (NAVI)
107	DPG	IN	DRUM PICKUP PULSE INPUT (SWITCHING PULSE)
108	DFG	IN	DRUM FG PULSE INPUT
109	VCC	-	SYSTEM POWER
110	V.PULSE	OUT	V.PULSE ADDITION TIMING CONTROL
111	VSS	-	GND
112	CTLREF	-	CTL REFERENCE VOLTAGE

4.25 SYSTEM CONTROL BLOCK DIAGRAM



4.26 VIDEO BLOCK DIAGRAM



TO SYSCON
I2C D.ATA A/V
I2C CLK A/V
V.PULSE
V.REF
P.MUTE(L)
D.FF

CN501
D.FF
V.REF
I2C DATA A/V
I2C CLK A/V
C FROM DIGI
Y FROM DIGI
EE(L)
V/Y_TO_DIGI
C_TO_DIGI
Fsc

TO TUNER
TU_VIDEO
RF_VIDEO

CN502
EE(L)
I2C_DATA_A/V
I2C_CLK_A/V
Fsc
C_TO_DIGI
V/Y_TO_DIGI
Y_FROM_DIGI
C_FROM_DIGI
PB_COLOR
V.PULSE
MAIN_ALC_DET
Y_TO_SUB
P.MUTE(L)
FRONT_Y_IN
FRONT_C_IN
FRONT_V_IN
REAR2_V_IN
V_TO_OSD
CHARA_DATA
Y_TO_AV
V_FROM_AV
REC_COLOR

CN902
FRONT VIDEO

J7191
FRONT
VIDEO_IN
CN7191

J7194
FRONT S IN
CN7192

CN901
FRONT_Y_IN
FRONT_C_IN

2 8 SW/DISPLAY

J903
REAR
S-OUT

CN911
V_FROM_OSD
C_OUT
Y_OUT
REAR2_C_IN
REAR2_Y_IN
REAR1_C_IN
REAR1_Y_IN

TP106
PB.FM

Q21 BUF
BUF & EQ
Q5 BUF
Q24 BUF
2Fsc
Q10 BUF
Fsc
X1

IC1
(VIDEO & AUDIO
SIGNAL PROCESSOR)

fsc IN
NOT USED
FILTER
Q18 BUF
Q17 SW

TP111
D.FF

TO SYSCON
D.FF
VIDEO ENV
HEAD SEL

Head SW1
Head SW2
D.FF CTL

CN1
U. DRUM
VIDEO HEAD
SP CH2
SP CH1
EP(LP) CH1
EP(LP) CH1

TO SYSCON
S.CASS(H)
SUB BUSY
SUB RESET
NORM/MESEC/S
P.MUTE(L)
SYNC DET(H)
VHS(H)
I2C DATA2
I2C CLK2
OSD CS
SUB CS
S.CLK
S.DATA FRSYS
S.DATA TOSYS

0 3 MAIN (VIDEO,CONNECTION)

CN903
CN913
CN905
CN915
CN904
CN914
2Fsc
CN7103
CN3401

1 9 NAVIGATION

IC901
J902
AV2
IN/DECODER
J901
AV1
IN/OUT
Q903 BUF
Q904 BUF
Q909 BUF
Q905-Q907 AMP
Q901 Q908 Q911 Q912 BUF &SW
AV1
YCIN (H)
AV1
YCIN(H)

IC201
(ON_SCREEN
DISPLAY)
SYNC DET
MUTE
CHABLK
CV IN
XTAL IN
CVOUT
LN21
SCLK
SDATA

D201
D205
D3407

CN912
SCLK TOOSD
SD TOOSD
CSOSD SUB
TXD
RXD
LANC I/O

CN3402

J924
LANC
J923
JLIP

0 6 TERMINAL

IC3401
(MULTIPLEXER/
DEMULTIPLEXER)
X-COMM
Y-COMM
Z-COMM
NOT USED

IC3402
(MULTIPLEXER/
DEMULTIPLEXER)

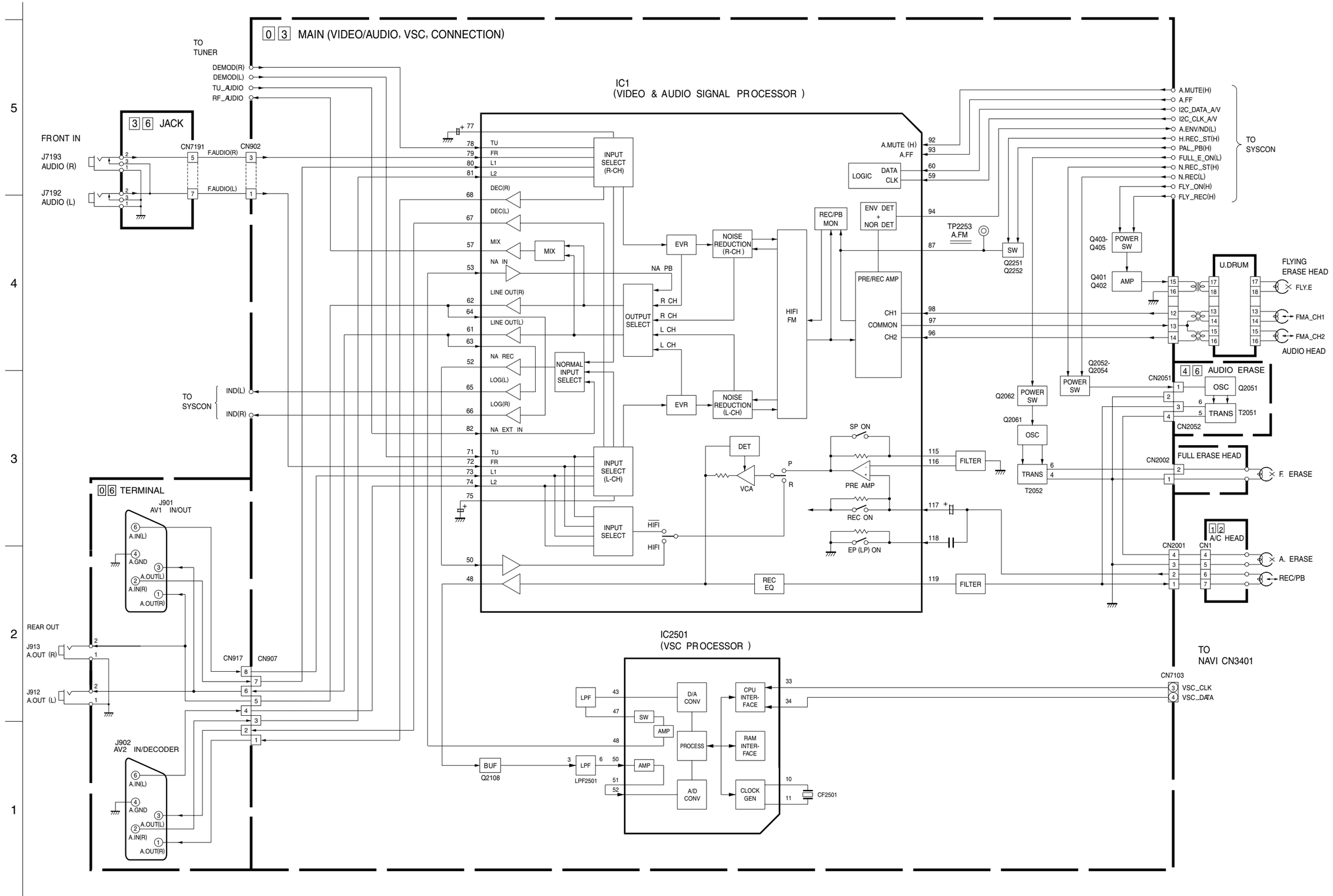
IC3301
(NAVIGATION
PROCESSOR)
S.CASS(H)
SUB BUSY
RESET
CS IN
SCLK IN
SD FRSYS
SD TOSYS
OSD SEL
SD OUT
SCLK OUT
MEM CS
MEM SIN
DEVICE SEL
OSD CS

IC3403
(1M-BIT
FLASH MEMORY)
SCK
CS
SI
SO

IC3405
IC3406
TXD
RXD
JLIP(L)

A B C D 4-51 4-52 E F G H

4.27 AUDIO BLOCK DIAGRAM



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